

RESEARCHES
RESPECTING THE
NATURAL HISTORY, CHEMICAL ANALYSIS,
AND
MEDICINAL VIRTUES,
OF THE
SPUR, OR ERGOT OF RYE,
WHEN ADMINISTERED AS A REMEDY
IN CERTAIN STATES OF THE UTERUS.

WITH A COLOURED ENGRAVING.

By ADAM NEALE, M.D.

PHYSICIAN TO HIS MAJESTY'S FORCES, AND TO HIS LATE ROYAL
HIGHNESS THE DUKE OF KENT, &c. &c.

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HAVING strong grounds for believing that the mischievous employment of obstetrical instruments is a source of much misery, and of increasing frequency; and being persuaded that a more intimate knowledge of the efficacy and virtues of the spurred rye would tend very much to put an end to this evil practice; I have endeavoured to condense within a few pages, the observations contained in one of the best works which has appeared in France on this subject, I mean that of Dr. Villeneuve of Paris. In the hopes that the public will condescend to consider this, therefore, as an attempt to serve their best interests, and to diffuse knowledge on a point of no small importance to the safety of the female sex, and of their offspring, I now commit it to the press, and to their protection.

A. N.

58, Guildford Street, Russell Square,
15th April, 1828.

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To such persons as may be desirous of administering the spurred rye, it may be useful to know, that it may be obtained of the best quality, at MORSON'S, operative chemist, 19, Southampton Row; and at JAMES BUTLER'S, herbalist, Covent-garden Market.

ON SPURRED RYE.

CHAP. I.

THE vegetable substance called spurred rye, has been so denominated from its fancied resemblance to the spur of a cock. It is known throughout the different countries of Europe by various names, all derived either from its configuration or origin, or from the different qualities which it has been found to possess. Thus, in France, it has been called *ergot*, *argot*, *bled avorte*, *bled cornu*, *bled farouche*, or *have*, or *rachitique*, *calcar*, *chambucle*, *clavus fuliginis*, *clou de seigle*, *ebrun*, *faux seigle*, *mane*, *mère de seigle*, *secalis mater*, *seigle cornu* or *corrumpu*, *seigle à eperon* or *ergotise*, *seigle ivre*, and *seigle noir*; and Gaspard Bauhin has named it *secale luxurians*.

The name of mother-corn (*mutter-korn*), given it by the Germans, and which corresponds to a similar name bestowed on it in one of the provinces of France, is explained by authors in different manners. Some suppose that it is a name applied to it on account of its increased size, so much

larger than that of the healthy grains, but without any idea of its medicinal qualities : whilst others, and particularly M. Huchedé, think that this name has been given to it solely on account of its medicinal properties, and that it serves to prove its long continued adoption as a remedy in certain states of the muscular action of the womb.

CHAP. II.

NATURAL HISTORY.

As in the following pages it is intended only to treat of the medicinal qualities of the spurred rye, it will be quite unnecessary to enter into any discussion of the following questions, which are more particularly interesting to agriculturists and botanists, namely :

1. Whether it owes its formation to a superabundancy or depravation of the natural juices of the plant ?

2. Whether it is more particularly owing to the presence of a sort of honey-dew, which penetrates into and diseases the grain ?

3. Whether the seed-time has any influence upon its formation, as modified by the nature of the manure, or by hoar frosts, or from the soil being newly broken up; or whether, as asserted by some writers, it is more common in plants near

the borders of the fields than those growing in the centre?

4. Whether rye when sown mingled with other grains, be more susceptible of becoming *spurred* than when sown alone?

5. Whether, as is believed by Duhamel, Ray, Tillet, &c. it be like the gall-nut, the result of the stings of certain insects, in order thereby either to feed themselves, or to deposit their eggs; a sting, by the way, which several authors have considered as being a sort of inoculation of an irritating fluid secreted by the insects, and productive of a degeneration of the grain. But, as M. Lèveillé remarks, this insect is not to be confounded with those aphides found creeping on the surface of the grain, and nourishing themselves on the viscid honey-dew with which it is covered!

6. Whether any of the microscopic generating eels of Fontana, observed also by Buffon and Needham, are to be found on it? or whether some other animalcules, such as those asserted by Rafu, and rejected by Roffendi and Rainville, produce it?

7. Whether this peculiar alteration of rye be not the result of putridity? an opinion entertained by Vauquelin and Virey, and some other naturalists.

8. Whether, as is asserted by Parmentier, the *spur* has its first origin from a state of weakness in the covering of the grain?

9. Whether or not it may be compared, as opined by Beguillet, de Jussieu, and Geoffroy, as a sort of false conception or *mole*, the result of some vice or defect of fecundation? or whether we should compare it to the schirri, elephantiasis, and other such morbid affections in the animal kingdom? or whether, according to M. Gadd, it be not like the goître, as being produced by great alternations of cold and moisture, the causes of goître in the human species?

10. Whether we should adopt the opinion of Paulet, of De Candolle, or of Todde, that the spurred rye is in fact a new vegetable engrafted in place of the grain; and, as they think, a sort of parasite fungus of the genus *sclerotium*, to which De Candolle has given the name of *sclerotium clavus*?

11, or lastly. Whether there are not different sorts of spurred rye, as believed by Wildenow, in his Pathology of Plants, and by him divided into two kinds, the one innocent, the other noxious; in which idea he is supported by Langius. The innocent being, according to Wildenow, of a pale violet colour, white within and farinaceous, devoid of smell and taste, and which may be ground without danger when mixed with other grain. While the second kind is of a deep violet or blackish colour externally, and in the interior of a greyish white, exhaling a disagreeable odour, and having a corrosive taste.

After this long list of opinions, as to the cause, formation, and nature of spurred rye, all announced by different authors, we shall quote that of Wesener, who disputes the whole, and yet does not establish any thing new.

To the above opinions we must lastly add the following observations, made by a young physician named Lèveillé, and published last year at Paris in a short pamphlet. He states, that having observed attentively the spurred rye at different stages of its growth, he has discovered that this vegetable substance is composed of two portions altogether different. The one which is only the unimpregnated ovary, and which is the spurred rye universally known; the other scarcely observed, because it can only be perceived at a certain period of the growth of the *spur*, is susceptible of being detached with the greatest ease, or indeed of melting down under the appearance of a viscid juice, into which it distils itself. This latter portion is a true mushroom or fungus, to which he gives the name of *sphacelaria segetum*, on account of the property which he attributes to it of producing gangrene, when taken into the human stomach for any period of time. This fungus shows itself at the detached extremity of the spur, in the form of a yellowish substance of a conical shape, and varying in size, being often some fractions of an inch in length, unequal in surface, and covered over with very minute irre-

gular undulations. Its base, divided into four or five portions, embraces the whole of the external extremity of the spurred ovary. Its upper part is roundish or tuberculous, and sometimes presents a down, which, however, is foreign to its structure. This *sphacelaria*, when fully developed, gives issue to a thickish liquid, which is oleaginous, and drying up covers the surface of the spur, forming a slender crust of a dirty yellow hue, which splitting, finally detaches itself in the form of scales. By degrees the *sphacelaria* itself diminishes in bulk, becomes dry and wrinkled, and separates with the greatest facility from the spurred ovary.

But the growth of the *sphacelaria* is not always so regular in its progress. When the weather is rainy, at the time when this fungus has reached its full size, it is thoroughly washed, and then the juice which exudes from it being diluted, is carried off by the rain water, so that there remains no trace of its existence upon the spurred rye. Frequently the body of the *sphacelaria* itself is swept off, and at other times it is reduced to a very minute size.

Messrs. Baudelouque and Lèveillé, who however have not made any experiments themselves, are desirous that the *sphacelaria* or *sphacely*, should be administered alone in some cases, where the use of spurred rye is indicated, but only in the dose of four or five grains; whilst, in others, the spur itself should be given in the usual doses, and deprived as much as possible of the substance

before mentioned. From these comparative experiments, repeated for a sufficient number of times, results might no doubt be obtained which would enable us to judge, by means of facts, of the merely theoretical opinions conceived by former authors.

M. Lévillé establishes also that the sphacelaria shows itself likewise on the spur which attacks several other vegetables which we shall enumerate hereafter. But waiving all these opinions, one truth is certain, that in some countries, and more particularly in Sologne, in France, during rainy seasons, it is observed that the crops of rye are much more subject to the alteration of which we have been speaking; whilst elsewhere it is only met with in solitary instances, and without any perceptible cause; and in some parts too, as in the environs of Paris, spurred rye is found in crops growing on a dry and sandy soil.

The grain of the rye, when attacked with the spur, first becomes softish and pulpy; soon bursting out of its husk, it attains solidity, and lengthening itself it assumes a reddish colour, which then changes to violet. Its increase, which is frequently very rapid, then shortly becomes such that the grain, so altered, is most commonly out of all proportion to the rest of the spike.

All the spikes springing from the same grain are far from being attacked with the spur; and a spike when attacked, generally presents but a few so

diseased. Sometimes, but more rarely, one portion only of the grain is thus attacked, and then it is always confined to the more external portion or extremity. It is stated positively, and in a way which removes all doubt on the subject, that spurred rye is incapable of germinating, and therefore that it cannot by possibility be reproduced by itself.

The spur ought not to be confounded with rust, the smut, or the rottenness, other diseases of corn, from which it is essentially different.

Wheat, barley, oats, maize, canary seed, several festucas, sword grass or carex, different loliums, and especially the *lolium temulentum** or ivraie, certain species of reeds, and millet seed, are likewise subject to the spur. Nay, Eymen asserts, that the family of palms are attacked with it, like rye, and that produces equally destructive effects, an assertion, however, which requires further confirmation. As to all these different instances of ergot, it is as yet quite unknown, whether they would produce any effects on the animal system corresponding to those produced by the spurred rye. The coloured print annexed to this pamphlet is intended to represent a spike of rye as attacked with this disease.

* The *lolium temulentum* is darnel, or the tares of the New Testament, which "the enemy" is said to have sown amongst the corn "by night." Matthew xiii. 25—29.

CHAP. III.

DESCRIPTION AND PHYSICAL PROPERTIES.

SPURRED RYE, in its mature state, is of a violet or brownish colour. Its size is very variable; some grains being less than healthy rye, and can scarcely be perceived in their husks, whilst others are from one inch to an inch and a half in length, and of a thickness in proportion. However the mean size of the grains of spurred rye is from six to ten-eighths of an inch in length, and two-eighths of an inch in diameter. Its form is nearly cylindrical, having its ends somewhat obtuse, at times a little pointed, and bent a little in the shape of a crescent. But there is a great variety in this respect; although in all the shape is more or less *monstrous*. They have generally a longitudinal depression or two running from end to end. Some grains have cracks, apparently from dryness; and in others small cavities, apparently the bites of coleopterous insects. On being broken transversely, they snap like dried almonds; and internally display a greyish white substance, closely covered by the coloured cortical part, which does not separate from it on ebullition. Seen through a microscope, this fracture presents in its centre an appearance of white brilliant grains like starch, and towards the circumference a violet shading

besprinkled with minute whitish spots. When reduced to a powder, it is of an ashen-grey colour, and of a very dry feel between the fingers. If quite fresh, spurred rye is of a disagreeable sickly odour; but if dry, and the grains in a good state of preservation, it is altogether inodorous. A certain quantity, after having been kept for some years in a close box, had contracted the disagreeable smell of rotten fish. It was also of a black colour, and almost all the grains were in a degree worm-eaten, with little of substance left except the cortical part, so that it was quite friable on touch. However, no other traces of insects could be discovered about them. In a state of powder, if carefully kept, the spurred rye, if it has any smell at all, has it so weak as to be scarcely distinguishable. When snuffed up into the nostrils, it produces a slight degree of irritation, like a small pinch of powdered tobacco, occasioning a tendency to sneeze, and a pretty abundant secretion of mucus. In the grain and quite dry, spurred rye has scarcely any taste, and on being chewed, leaves in the mouth a slight acrimony. But in the powder its taste is nauseous, bitter, and acrid, like that of corn when in a state of rottenness. On kneading up with warm water the flour of rye affected with the spur, a fetid disagreeable smell is very perceptible. The paste is not adherent, and the bread has neither the consistence nor smell of the common rye bread.

Parmentier, who had some made with flour containing one-third of spurred rye, asserts that the bread was quite inodorous, and only slightly bitter. However it may easily be conceived, that the qualities of such bread must vary according to the greater or less quantity of the spurred rye entering into its composition, which in a natural way can scarcely ever equal that formed by Parmentier.

CHAP. IV.

CHEMICAL ANALYSIS.

ALTHOUGH several chemists have made this substance the subject of experiments, yet the analysis of Vauquelin appears to be by far the most accurate; from which it results, that spurred rye contains—

1. A yellowish fawn-coloured matter, soluble in alcohol, exhaling a smell like that of fish oil.
2. A white oily matter of a bland taste.
3. A violet-coloured matter, insoluble in alcohol.
4. A free acid, which appears to be of the nature of phosphoric acid.
5. A vegeto-animal matter in considerable quantity, much disposed to putrefaction, and which on distillation furnishes a considerable quantity of thick ammoniacal oil.
6. A minute quantity of free ammonia, exhaling at the temperature of boiling water.

Lastly, it results from this analysis, that rye in its spurred state no longer contains any starch; that its gluten has become altered, and that it abounds with a thick ammoniacal oil, which is never to be met with in rye when in its sound state. The same chemist, wishing to clear up an important point in the natural history of spurred rye, has made a comparative analysis of *sclerotium*; by means of which he obtained results so totally different, that he considers the opinion to be quite erroneous, which would maintain that spurred rye is a species of *sclerotium*.

Pettelnhoffer, as cited by Ficinus, is said to have demonstrated in 1819 the existence of *morphine* in spurred rye. M. Combes too, who repeated the analysis in 1826, asserts that he found starch, but that he could by no means obtain in a separate state the active principle of this vegetable substance. M. Desgranges reports, that an apothecary of Lyons having analysed a part, the cortical part only of the spurred rye, had discovered therein a great quantity of resinous substance, soluble in alcohol and ether; which is perhaps only a modification of the oil contained in the internal part, which had become oxygenised by the contact of atmospheric air. There does not exist, at least as far as we know, any chemical analysis of the spur of the other grasses. It is the same with the *sphacelaria*, or *sphacelia*, discovered by Messrs. Léviellé and Baudeloque, the

analysis of which might throw great light upon the opinion they have advanced with respect to the different effects of spurred rye, such as what is daily administered. Whence also the necessity, in the opinion of M. Léviellé, of repeating the analysis of spurred rye, properly so called; not that he suspects any errors in the process of M. Vauquelin, but because having confounded in that analysis both the spurred rye and the sphacelaria, we know not to which of these two vegetable productions to refer such or such a principle furnished by that analysis. Still, however, the results obtained by M. Vauquelin have served as a foundation for many various opinions. Thus, M. Virey regards the copious animal matter discovered, as being the principle of that morbid alteration of the rye; while M. Corhaul says it is to the acid principle that we ought to attribute the origin of the disease in the grain.

Nevertheless, the results obtained up to the present time may furnish some useful hints for the medicinal preparations of this substance; in which further researches may probably yet discover an active principle, *sui generis*, as has been lately the case in regard to *cinchona*, *ippecacuana*, *nux vomica*, &c. &c.

CHAP. V.

MEDICAL HISTORY

WE need hardly trouble ourselves to inquire whether this accidental production of the vegetable kingdom is the same as that called by Pliny and Theophrastus *luxuries vegetum*; a question no doubt very curious, but quite foreign to the object of this inquiry. The medical history of the spurred rye, however, very naturally divides itself into two parts—one embracing its toxicology and pathology, and the other considering it only as an article of materia medica, and particularly connected with uterine affections and parturition.

HISTORY OF SPURRED RYE AS CONNECTED WITH
TOXICOLOGY AND PATHOLOGY.

The deleterious effects of spurred rye, when taken mixed with aliment, were first recognized, according to Mezarai the historian, by Sigebert de Gremblour, as early as the year 1096; whilst several other authors are agreed in attributing to Wendelin Thelius, a German physician who lived towards the conclusion of the sixteenth century, the first exact description of this substance, as well as the precise indication of its pernicious effects, which he published on the occasion of an epidemic caused by the use of this substance, and which ravaged the kingdom of Hesse in the year

1596. During the years 1648 and 1649, both Saxony and Sweden became a prey to a similar epidemic. Twenty years afterwards, the same accident took place from the same cause at Blois and Montargis in France. Nevertheless it was not until the year 1670 that the Academy of Sciences in Paris became first informed of the singular accidents which had happened in Cologne, in consequence of the use of bread there made from the spurred rye. In 1777 M. Tessier, having witnessed on the same spot a similar epidemic, made on this occasion various observations, researches, and experiments, the relation of which forms one of the most interesting portions of the memoirs of the Ancient Royal Society of Medicine, and which may be consulted with advantage by all those who wish to study the deleterious effects of spurred rye.

Since that period, several epidemics of the same nature have been observed in certain parts of France, but all more or less slight in degree. The last, which has been pointed out by M. Huchedé, took place in Burgundy in the year 1816. The manifest accidents resulting from the use of spurred rye, when taken freely during a longer or shorter time, and in proportions more or less considerable, are of two kinds; namely, first, giddiness of the head, spasms and convulsions, &c. &c. and secondly, gangrene and sloughing of the extremities.

These two kinds of accidents, which generally

display themselves separately, and under circumstances which it is not here our object to point out, constitute that morbid state called *ergotisme*, which is to be found very accurately described under that title by M. Renaudin in the *Dictionnaire des Sciences Médicales*.

One thing very remarkable, and which it is of importance for us to observe, is, (as we shall hereafter notice,) that amongst all the different accidents caused by the spurred rye, there is no mention made in a positive and formal way, of any instance of abortion or premature birth of any infant dead or alive. Of which fact we have convinced ourselves by repeated researches, not only in the relations of the epidemics already mentioned, but also in the generality of the works of those authors named in the list placed in front of this essay. We will particularly cite by name M. Renaudin, who has given an abridgment of the greater number of these epidemics, or pointed out the works where they are to be met with ; accidents so severe, that they could not have escaped the researches of the author of the article *Ergotisme*.

It is also worthy of note, that M. Tessier is the only author who, to our knowledge, has mentioned abortions in consequence of the using bread containing the spurred rye ; and even he has done so in a manner so very laconic, and with so few particulars, that it is most probable that this accident, so far from having taken place sooner or later with

all those pregnant women who had eaten this bread, and was so far from having been a frequent occurrence in the opinion of this author, that it appeared to him to be only in the common proportions, as happening usually to the female peasantry, a class exposed to poverty and hard labour, and therefore liable to various accidents.

We should make the same remark with regard to a like assertion lately reproduced by Baudeloque, evidently taken from Tessier. To which assertion, however, we might oppose that of Taube, who, describing the epidemic he had witnessed, says positively that the pregnant women attacked by *ergotisme*, were not subject to abortions; and that the lochial discharges of the parturient were in nowise deranged. From all which cases it appears certain, that the abortions which happened during the use of food made from rye tainted with the spur, did not occur at an early period after first using this food; and that they did not show themselves until the last severe accidents resulted, when the very principles of life were reduced to such extremities, that life itself could no longer be preserved: so that they ought not to be at all attributed to the special action of the spur upon the womb, and still less to its abortive quality, but rather to a complete destruction of the whole vitality, as we may daily witness in violent accidents from wounds, from severe acute and

febrile attacks, and in chronic affections more or less advanced.

Another very important fact is, that authors are equally silent as to derangements or suppressions of the monthly discharges in females during a state of *ergotisme*; which, to a certain point, might be considered either as an omission or a defect of observation, had not Burghardt stated positively, that "convulsive *ergotisme*" did not put a stop to the menstrual flux. A third fact to be considered, and of which there can be no doubt, as it has been frequently observed, is the preservation of the secretion of milk with wet-nurses, whilst they are using a diet composed of rye-bread contaminated with the spur: Tessier being here again the only person who has observed and stated the contrary. Renauldin has also remarked besides, that the "gangrenous *ergotisme*" does not attack females. But even before him, Tessier and others had acknowledged that spurred rye acted with less force upon females than on males; which may well be, since women eating in general much less than men, do not consume so large a quantity of bread containing this deleterious substance. In spite, however, of the plainest and most satisfactory evidence, that the prolonged use of this unhealthy bread is the immediate cause of the deaths which have occurred epidemically; yet several authors, such as Model,

Paulet, Ryan, Schleger, and Wolf, have been of opinion, that these deaths were rather caused by the great vicissitudes of the weather and temperature, than by the diseased state of the rye. We should not omit also to mention here Hufeland, as joining in the opinion of the last cited; and also thinking; that under some circumstances, the deaths ascribed to the use of spurred rye, ought rather to be imputed to the *ivraie* or *lolium temulentum*. But if necessary to refute such errors in judgment, it would be only requisite to call to mind the experiments made by Tessier upon various animals removed altogether from any of the noxious influence of weather and atmosphere, and which on being nourished with food containing more or less of spurred rye, have suffered in like manner as human beings.

Some other writers, such as Tissot, and Desgranges, maintain another opinion much more probable than the foregoing, namely; that on being dried and preserved, the spurred rye loses much of its noxious qualities. Still, as it is quite certain that even after being kiln-dried, and kept for several years, this substance still possesses particular properties, one must imagine that even then, if taken in great quantities, it cannot fail of proving deleterious.

HISTORY OF SPURRED RYE, AS AN ARTICLE OF MATERIA
MEDICA, AND ITS EXHIBITION IN PARTURITION AND
AFFECTIONS OF THE UTERUS.

IN like manner as many other medicines of great power and value, the knowledge of this substance has been hitherto almost confined to its poisonous qualities; and many physicians of great information have hitherto been quite ignorant that it could boast any other. Unable as we are to point out in what way the uterine and obstetrical qualities of this substance were first discovered, still we cannot agree with Davies and some other writers, that it was from having observed it employed with the culpable intention of producing abortion, that physicians have been led to convert its virtues to the benefit of suffering humanity: and this opinion we shall justify in the following pages.

Of spurred rye, first mentioned in 1596 for its noxious effects, no notice occurs as a uterine remedy till 1688, when R. J. Camerarius (a good name by the way) stated, that the women in certain parts of Germany were in the habit of employing this sort of grain to accelerate parturition. What also is very strange is, that from that period until 1774 no author had made mention of it as being so used; and it was only then that a very brief letter from Parmentier to the editor of the *Journal*

de Physique, made known that it was frequently used as a child-bed remedy by Madame Depille, a midwife at Chaumont, in the Vexin. But this letter, which is a mere announcement of the simple fact, contained no other information. It was therefore reserved for M. Desgranges, an able accoucheur at Lyons, to fully appreciate and make known the singular property of spurred rye. He having met with several midwives in 1777, both in Lyons and its environs, who, from a traditional knowledge, were accustomed to employ, with no little mystery, the spurred rye in cases of lingering labours, at length made himself a great many trials of it, which for the most part were crowned with success. Thereafter he published, at different times and in various journals, the results of his practice and observations, and specified, with the greatest care, the peculiar circumstances which admit or contraindicate the employment of this remedy. It is therefore to the zeal and knowledge of Desgranges that the public and profession are indebted for the precise acquaintance with this valuable remedy; which he never ceased propagating with all his talents, in spite of the strongest prejudices, and a variety of difficulties of all kinds which he had to surmount. When this discovery was first announced in France, the employment of ergotted rye was only known in the department of the Rhone, and some of the frontier departments. Soon after its

use began gradually to spread from various points throughout that kingdom, as may be proved from the great number of cases published since in periodical works, by practitioners in the different departments.

According to Dittmer, it is also used in different countries in Germany, and particularly in the environs of Ludwisbourg, in Wirtemberg, where this medicine is principally in the hands of the midwives, who, as he states, give it usually to be swallowed whole in the natural state, administering either five or nine grains for a dose, but always in odd numbers. At Florence also, as well as in other parts of Italy, at London, and more particularly in the United States of America, the spurred rye has been employed by enlightened men: and in America this substance appears to be already held in as much estimation as any well-established article of the *Materia Medica*.

Amongst the physicians who, in concert with M. Desgranges, have powerfully contributed to propagate the knowledge of this remedy, either by their writings or practice, we may mention Messieurs Bourdot, and Goupil, at Paris; Chevreul, at Angiers; Pistre, at Ferrara (who has also published directions to midwives how to employ this new medicine); Orjollet, and Huchedé, by their theses, defended it at Strasbourg; Bigeschi, at Florence; Clarke, Davies, and Merriman, in London; Dewees, and Chapman, in Philadelphia;

lastly, Hosack, Prescott, and Stearns, at New York; from the last of whom we also learn, that spurred rye has long been administered by the rural matrons in Scotland.

We ought to add, that Hosack states, that he considers his substance as being useful in certain diseased affections of the womb, arising from weakness; such for instance as uterine tympanitis, mucous discharges, &c.: and likewise Davies, who has employed it in favouring the expulsion of *polypi*, and other excrescences of a fungous nature, from the womb. His translator, M. Eusebé, has added, that if these excrescences be of a soft and pulpy consistence, the simple contractions of the uterus are quite sufficient to expel them; and that when harder and firmer, their repulsion towards the vagina and external parts, must facilitate the employment of ligatures and other surgical proceedings, by which we may succeed in detaching them. Goupil advises also the same means in the uterine tympany from weakness of the muscular fibres of the womb; and also in expelling collections of fluid, if arising from amenorrhea. Lastly, we should mention, that this substance has been prescribed as an antihysterical remedy by Lonicere, without his having acquainted us, however, with its effects in this disease.

CHAP. VI.

OF THE REQUISITE CONDITIONS FOR THE SUCCESSFUL
EMPLOYMENT, IN CASES OF PARTURITION, OF THE
SPURRED RYE.

THIS remedy can only be administered with success in cases of parturition under particular circumstances, which may be classed under the following provisos :

1st. Provided always, that there exists no fault in the conformation of the bones of the pelvis, or of the soft parts of the mother, which can oppose any remarkable obstacle to the passage of the fœtus.

If the dimensions of the pelvis be small, that is not sufficient *easily* to afford a passage to the expulsion of a full-grown fœtus ; as for instance, less than three inches and a half between the pubes and sacrum ; the spurred rye, by exciting strong uterine contractions, without any possibility of overcoming the mechanical obstacle opposed by the straitness of the bones of the pelvis to the birth of the child, might be the cause of producing that very fatal occurrence—a rupture of the uterus itself. A similar inconvenience might result too, if the passage should be obstructed by any large tumour, or by any excessive straitness or great rigidity of the orifice or sides of the vulva.

The obliquity also, or any great deviation from a natural position of the womb, would form an obstacle, at least for a time, to the administration of this remedy.

2dly. Provided, that the neck of the womb be quite supple and yielding, and partly dilated; and that the time of parturition shall have decidedly commenced, or already existed for some hours.

Rigidity and hardness of the neck of the womb, from any cause whatever, as well as a diseased enlargement of this part, contraindicate in an essential degree the employment of this remedy; for the expulsive contractions of the muscular fibres of the uterus taking place from its fundus downwards, and towards its orifice, any great obstacle existing there to the muscular contractions, might be productive of a rupture, either in that spot or in some other parts of that organ.

In the case of a simple rigidity of the os tinæ and neck of the womb, provided it be not occasioned or kept up by plethora, we may employ a remedy of which M. Chaussier has made the most successful use in cases of parturition; and which, although in its effects quite different to those of the spurred rye, is found an admirable co-operative. We allude to the extract of belladonna, applied directly to the part presenting the rigidity; that is, to the neck of the womb itself. The for-

mula, as published by Madame Lachapelle is as follows :

R. Extract. belladonnæ, ʒij.

Cerat. simpl. ʒi. Misce.

In these cases also some persons have been very successful by administering gentle opiates, simply or combined with antispasmodics, which produce sleep, and resolve that spasmodic state which attends this affection.

It is particularly to Messrs. Chapman and Prescott that we owe the caution never to administer the spurred rye until a sufficient degree of dilatation shall have taken place in the os uteri: a dilatation which this remedy cannot immediately produce, and which Desgranges thinks ought to be at least equal to the size of a sixpence. Nevertheless some facts seem to prove, that this remedy may be prescribed with success even in cases where the process of parturition shall not have advanced so far as to cause so much dilatation: and this truth may be gathered from the following statement made by a French practitioner. "A female having suffered much during three former accouchements, and having reached the full term of her fourth pregnancy, took some of the spurred rye before her labour pains commenced: the orifice of the womb was not dilated, its edges being still hard and thick, and not at all moist. About half an hour thereafter she was safely delivered of a child." But M. Desgranges, to

whom this case occurred, and who is besides very backward in giving this remedy under such circumstances, thinks that its adoption could only succeed when the female subject is of a soft relaxed leucophlegmatic habit, and one who has already borne children, when the neck of the womb is in a yielding supple state; and in short when, from all existing appearances, there may be reason to expect a labour attended with little pain, and very feeble contraction of the muscular fibres of the uterus. Our own opinion however is, that from all that has been advanced, it would not be prudent to prescribe this medicine unless labour seemed to be on the very eve of its commencement; and we must by all means hesitate giving it in any case where the patient is only suffering from false or fugitive grinding pains, in the neighbourhood of the kidneys, loins, groins, &c. And in this state of uncertainty, and where there may be indications of a state of general exhaustion and weakness, as likely to retard the coming on of real labour pains, we ought, before having recourse to the use of the remedy, to try what may be done by giving the patient proper strengthening food, such as warm broths, and even a few glasses of generous wine. And while pursuing this plan, the practitioner ought to take the opportunity of satisfying his mind that the position of the child is quite natural. On the same grounds, we ought not to administer this remedy in cases of pre-

mature accouchement ; where the waters continue to drain away several days before parturition has really commenced ; where there is neither any dilatation of the os uteri, nor any real pains. In a word, here, as in all other instances, *art should never precede nature* in hastening the natural act of delivery.

There is only, perhaps, one case of exception from this general rule ; and that is, where the fœtus, whatever may be the stage of pregnancy, has been dead for some time ; and that this death is notoriously indicated by all the usual characteristic symptoms. In such an instance, if the womb makes no effort to get rid of the dead body which it contains, and which is enfeebling or diminishing its vitality, it is admissible to attempt, by this means, to bring on its requisite muscular contractions, the result of which cannot possibly be attended with any disadvantage to the mother. †

3dly. Provided also, that the fœtus is presenting in such a manner as to be expelled naturally ; or without any necessity for the interference of art to change its position, and that its bulk is not too great for the natural passages.

Every person at all acquainted with the nature of parturition, will easily conceive the importance of this last general rule, which needs not the support of any reasoning.

The following fact, however, as stated by Hensichen, proves that this important rule has been

overlooked. "Being called into a woman whose waters had flowed away twenty-four hours previously, this practitioner found her almost in a dying state, and yet having very strong and frequent labour pains. He found that she had been taking, by the advice of the midwife, a quantity of spurred rye; that the genitals were greatly swelled, burning hot, and of a dark livid colour, approaching almost to black. The great and small labia were protruded greatly; and there was a falling down of the rectum to the extent of three inches." M. Henrischen discovered, "that the improper position of the head of the fœtus was the real obstacle to its delivery, and applied the blades of the forceps with success, whereby he succeeded in saving the life of the mother."

Here too we ought to remark, that wherever parturition is considerably advanced, or the os uteri is sufficiently dilatable, and the lower extremities of the child are presenting, it would be always more advisable to pull down the feet, and deliver the woman, than to try to excite the action of the womb by means of the spurred rye. And indeed in all the numerous cases to be hereafter quoted, we find no instance of a foot presentation treated by administering this remedy; so that we may conclude, that practitioners are pretty well agreed on this point. Also in those cases where the fœtus is monstrous, either from enormous bulk or malconformation, we should be adverse to the

giving this remedy. However, even in these, if the practitioner can succeed in diminishing to a proper size, by means of the operation of embriulcia, the excessive bulk of the child's head, there can be no objection, according to the opinion of Dr. Davies, in prescribing the spurred rye to assist in finishing the act of parturition, all other circumstances being favourable. Lastly, it is necessary to abstain altogether from the giving the ergot, if it be discovered that the umbilical cord be twisted several times round the neck of the foetus, and is thus causing an obstacle to delivery. So that it results from all which has been said in this chapter, that for the methodical and salutary employment of this remedy in cases of child-bed, the principal indication required, is the absence of sufficient uterine contractions to expel the contained foetus.

CHAP. VII.

CIRCUMSTANCES IN WHICH THE SPURRED RYE OUGHT NOT TO BE GIVEN AT ALL, OR AT LEAST WITH MUCH CAUTION AND RESERVE.

THE cases wherein this remedy is either contraindicated, or would prove hurtful, are now to be mentioned. And here we may first observe, that spurred rye, like all other remedies, ought never

to be employed during parturition, as long as the powers of nature herself can suffice to finish the act of child-birth. The most frèquent obstacle which presents itself is a state of plethora, or turgidity of the blood-vessels; as characterised by discolouration of the countenance, head-ache, fullness and hardness of the pulse, accompanied by strong uterine pains, without any expulsive efficacy; the orifice of the uterus being more or less thick, and in a state of hardness and rigidity, and pretty nearly closed. In this state of things, where blood-letting and the other means of depletion are indicated, the ergot of rye, so far from proving useful, might be very prejudicial, by increasing the rigidity of the os uteri and muscular fibres, more especially if its use should be persevered in; and the subsequent doses augmented on finding the first ineffectual. The following case, as stated by Henrischen, demonstrates the dangers of such a practice under the circumstances just pointed out: "A young woman, to whom a midwife had given some grains of spurred rye, in order to bring back the labour pains, which had ceased, had a speedy return of pain, much more intense in degree than any which had preceded: when, almost in a state of phrenzy, she clenched her hands, and then seizing upon the midwife by the head, in a convulsed state she soon brought into the world a living child." It is therefore a good rule laid down by Prescott, and which ought never to be

forgotten, "*that the ergot of rye ought never to be given during child-birth where the use of blood-letting is indicated.* But if *after bleeding*, either from its having been too copious or otherwise, the uterus shall have fallen into a state of torpidity, it is evident, in the opinion of Chalard, that recourse may be had to this remedy, provided there exists no other difficulty. Chapman and Prescott seem also agreed in recommending the prescription of the ergot after bloodletting, as being a good method of removing a general and local detention. It is true that Prescott is wont to abstract as much as thirty ounces of blood, which, if it be his general practice, we ought to recollect that although such a quantity may be found suited to the females on the other side of the Atlantic, here in Europe we might find it excessive; and that it would be thoughtless first to exhaust the strength, and then to have recourse to auxiliary means, which might have been unnecessary had the bleeding been more moderate.

The actual presence, or even the threatening, of spasm and convulsion, either of the whole frame, or of the womb alone, form also a contra-indication to the employment of spurred rye. We should therefore hesitate in recommending the practice advised by Chapman and Stearns, of administering this uterine stimulant, in order to hasten delivery in the case of child-bed convulsions. The singular theory propounded by the latter is

this: That during parturition the contractions may be transferred from the uterus to other parts of the body; wherefore he adds, that after a copious general bloodletting (the action of the remedy being to accumulate the vital forces upon the uterus) the proper expulsive contractions take place, and the consequent expulsion of the fœtus and entire cessation of the state of convulsion. Stearns supports this theory by a very curious fact, borrowed from Waterhouse, the principal circumstances of which are these: "A woman of nervous temperament, aged nineteen, having been attacked by the usual precursory symptoms of child-birth, was found by Mr. Waterhouse suffering very great pains in the back and abdomen, and with a shooting pain in the head, with a naturally slow but tense pulse. A venæsection of sixteen ounces, with fomentations to the abdomen, and a little opiate, gradually gave relief; and in the evening the woman slept calmly. After a quiet night some symptoms of delirium showed themselves; the patient complained of tormenting pains in the abdomen, and darting pains in the head. These symptoms increasing, were followed by one of the most frightful attacks of puerperal convulsions ever witnessed. She uttered the most incoherent expressions; her eyes rolled in their orbits; and biting her tongue severely, streams of blood flowed from the mouth; while the extremities were of a deadly coldness. The most

violent spasmodic contractions of the muscles of the back, abdomen, the neck, and lower jaw, convulsed her whole frame. On examination, the os uteri was found sufficiently dilated: but all the means commonly pointed out proved unavailing. Meantime the strength was sinking; the pulse becoming small and frequent; the respiration laborious; and the appearance of the countenance quite ghastly. Whilst in this state, Mr. Waterhouse thought of administering the spurred rye as the only probable remedy to save her life. He mixed up thirty grains of this substance powdered, in a small quantity of warm water, and gradually gave it to her by tea-spoonfuls, introduced between her teeth, her jaws being nearly locked. The effects of this remedy were almost instantaneous, and truly wonderful: the pains and spasm disappeared; her ideas became sane and regular; the patient awakening as if from a state of deep sleep, and complaining much of debility; a cup of tea with some light nourishment was then given to her, and she fell into a peaceful slumber. In the evening, lively and rapid labour pains came on, and she was delivered by Mr. Waterhouse in a short time, with perfect safety."

This case, although in itself sufficiently curious, is, in our opinion, scarcely adequate to combat our assertion: first, because in medicine no single fact can establish or destroy any general rule; and next, because the rapidity with which the cou-

vulsions ceased after giving the medicine, make it doubtful whether this could have been the effect of the remedy. And we may also remark, that the delivery in this seemed only a secondary effect of the ergot of rye, the expulsion of the child not having taken place till some considerable time after the employment of the rye, of which the immediate effect was the cessation of the convulsive state which hindered a spontaneous delivery.

Another American physician, Dr. Brinkle, reports an analogous case. A woman in travail was attacked with convulsions, and from the morning when they came on, bloodletting, blisters, and synapisms had been employed without effect. The spurred rye having been administered, the child was born at the end of an hour and a half, and all the convulsions ceased. In spite, however, of the successful issue of this case, Dr. Brinkle expresses some doubts as to the efficacy of this remedy in cases of puerperal convulsions.—The opinion of Dr. Davies on this subject, as related by M. Huchedé, may be here stated. “Speaking of ergot of rye, Dr. Davies acknowledged to him the advantage to be derived from it: 1st, In discovering the spasm of which the uterus was the seat: 2dly, in awakening the proper contractions of the uterus when they are becoming languid, or have totally ceased; particularly when the torpidity of this organ seems to arise from the rigidity of its mus-

cular fibres." Still, however, if more trials should be made of the ergot in such cases, we should advise great circumspection in its use, and that the practitioner should be on the watch, so as to adopt any measures in the event of any failure in a case of so great exigency.

Another circumstance also, which up to a certain point is opposed to the giving this remedy, is, any extreme degree of nervous susceptibility, either habitual or occasional, in the woman in travail; as it has been remarked that in such circumstances this remedy is very exhausting, and oftentimes fails; which likewise happens more or less in cases of considerable general debility. We must also avoid giving it, if possible, to females whose stomach is feeble and irritable, consequently liable to vomiting: and for the same reason we ought not to give it to those who have suffered greatly from vomiting during the course of their pregnancy. Neither ought we to administer this remedy but with great reserve to females possessing an excessive uterine sensibility, and subject to great irritation therein; to whom any irritating diet, or external excitations, are apt to prove hurtful. Lastly, it will be prudent not to give the ergot to females, who in their former lyings-in have been attacked with *metritis* or *peritonitis*, for fear of any return or relapse of these attacks: although, if we may trust to M. Billard's report, he has seen this remedy

given without the least inconvenience or bad consequences to women in labour, even when peritonitis was a prevalent complaint amongst females in child-bed.

CHAP. VIII.

PREPARATIONS, DOSES, AND METHODS OF PRESCRIBING.

THE different preparations or forms under which the ergot of rye may be given, are as follows:

1st, The powder; 2d, the infusion; 3d, decoction; 4th, watery extract; 5th, spirituous tincture; 6th, ætherial tincture; 7th, spirituous extract; 8th, the syrup.

Powder.—This is the most simple of the preparations of this substance, and which may indeed serve for almost all the rest. Its properties are more apparent in proportion to the fineness and freshness of the powder. This preparation, hitherto acknowledged to be the most active and efficient, is also that which is the most frequently administered; wherefore it has been called by Stearns, *pulvis parturiens*: also *pulvis partum accelerans*, and *poudre obstetricale*, by Desgranges; and *poudre ocyotique* by Bordot. The dose must be varied according to the particular circumstances of the case; and be suited to the

susceptibility of the patient in regard to the remedy. The quantity may be greater or less in proportion to the age, nervous habit, debility, or strength, &c. of the female in child-bed. It must be proportioned also to the particular sensibility of the stomach and uterus; according to the courage or timidity of the female; the duration of the labour; and the interval which may have elapsed since the rupture of the membranes. Regard also must be had to the size of the child, &c. Lastly, it is a maxim laid down by the best authors, that the spurred rye ought to be given with more reserve to women bearing their *first* children than to others. The dose then should be from ten grains (which is the largest prescribed by Stearns) to ninety grains, and even more, during one parturition; and it may be given in a small wine-glassful of any fluid most agreeable to the patient, such as barley water, capillaire and water, cinnamon or orange water, &c.; and it may even be given in jelly or marmalade; but as the powder is not of a disagreeable flavour, it is needless to give it in pills or boluses, as its immediate action might be delayed thereby, and valuable time lost.

As we must for the most part be ignorant to what extent exactly this substance may act upon the person to whom we are giving it; and as there might arise much inconvenience in hurrying a labour too much, we ought never to exceed twenty grains for the first dose; and even this we

had better give in two portions taken after a short interval. But if at the end of a certain time, an hour for instance, there should result no apparent effect in the action of the uterus, we may give an equal quantity, that is, another scruple for a single dose: and should it become necessary to administer a third dose, we may then give thirty grains. In an extreme case, where at the end of a certain time even this third dose should have produced no effect, we might possibly venture on giving a fourth of the same weight; after which it would be a point of prudence to abstain; whatever may be the tardiness of the labour, or the degree of torpidity of the womb. It may be easily imagined, that the manner of giving the spurred rye may vary infinitely; and that what we have advanced on this subject is far from constituting an invariable rule; as the ergot may be prescribed in different ways, according to the circumstances of the female patient, and also according to the particular views of the practitioner.

We ought however to observe, that when given in too feeble doses the ergot of rye only produces very weak muscular contractions of the womb, which are so far from making that organ expel its contents, that they serve only to fatigue and wear out the strength of the patient. Although we have recommended this remedy to be generally given in some innocent weak fluid, without the addition of any substance capable of seconding or modi-

fyiſg its effects ; and although this is moſt adviſable when we wiſh to aſcertain precisely its effects ; yet ſome authors have recommended, ſo as to augment its activity or facilitate its adminiſtration, to give it in wine, and more particularly in *good generous* wine. Thus Balardini adviſes giving it in white wine, having remarked, that in this vehicle the ſtomach never rejects it. Others have recommended the addition of a certain doſe of muſk, or of cloves, or of the diſtilled waters of nutmeg, mint, &c. Bordot, without pointing out the doſe, joins the nutmeg in ſubſtance with a certain quantity of powdered ſugar ; while Goupil gives great praiſe to the following formula :

℞. Secalis nigri, in pulv.	ʒi.	
Syrupi ſimplicis	ʒi ſs.	
Ol. menthæ eſſent.	gtts. iij.	Miſce in mortario.

To be given in doſes of a ſpoonful at intervals of ten minutes.

We may add, that in the generality of caſes where it is judged expedient to make any addition to the ergot of rye, the taſte of the patient may be conſulted. Stearns and Gill recommend alſo to give opium in addition to the spurred rye, in the proportion of one grain of opium to thirty grains of the ergot : and Stearns aſſerts, that if this mixture be given by deſſert or table-ſpoonfuls every ten minutes, you may often ſucceed in bringing back labour pains when they have been ſuſpended. But as he does not ſpecify the exact

nature of those cases wherein it has been given, we are left to imagine that delivery has been impeded by a spasmodic contraction of the os uteri, and in those cases it would perhaps be preferable to use the local application of the extract of belladonna, and give the ergot internally without the opium. It is observed by M. Villeneuve, that in many cases it may be proper to give the ergot without apprising the patient or her friends and attendants of the nature of the medicine prescribed. But of course this must depend on the discretion and influence of the practitioner.

The infusion; the tea of black rye of the American midwives.—One drachm of the powder is to be mixed with a wine-glassful of boiling water, and left till almost cold. It is then to be strained, and divided into two equal portions, and administered, leaving an hour's interval between the first and second dose: of course it will be useless to give the second quantity, if the first should answer. To this preparation Messrs. Chevrue and Akerly give the preference; and Walter thinks, that we may double its strength by making it from two drachms instead of one of the powder.

Decoction.—This is the *decoctum parturiens* of some writers: it is made in the same proportions as the infusion; but the mixture is made to boil for a quarter of an hour; and it is given in the same way as the infusion.

M. Baudeloque states, that after boiling it for ten minutes, the spurred rye only loses twelve grains out of sixty. Madame Lachapelle gave the ergot in decoction and infusion, using it in doses of two drachms, boiled in water, and leaving the powder in the liquid without filtering it; and which doses, she asserts, *produced no effect* one way or other. Foot boiled up the entire grain, even in ounces at a time, and gave the decoction by table-spoonfuls at short intervals. Desgranges recommends roasting the powder gently before the fire; and also states, that he gave the black external cortical part only, in doses of four or six grains, without any of the inner substance, and that these small doses proved equal in effect to half a drachm of the entire grains. As to all the other preparations before alluded to, since we know nothing of any particular effects or advantages they may possess, we shall barely confine ourselves to their simple enumeration. Desgranges states that they have all been used at Lyons; and Bordot states, that Godeville prefers the special use of the extract.

M. Villeneuve mentions, that the spurred rye may be administered advantageously in *lavements*; and that it is the best mode of using it whenever there is too great a susceptibility of the stomach, or nausea, vomiting, and repugnance on the part of the patient to swallow it. From the close sympathy between the rectum and uterus, we may

augur well of this method of using it: of course, in this manner we may give it in much larger quantities than when swallowed. Two or three drachms of the powder may be boiled in half a pint of water, and strained off for use; and if the first *enema* fails, a second or third may be given.

CHAP. IX.

EFFECTS OF THE SPURRED RYE UPON THE UTERUS, &c.

THE general effects produced by the spurred rye given during the act of parturition, and displayed very soon after its being received into the stomach, that is, at the end generally of ten or fifteen minutes, according to the individual temperament of the female, are nearly these:* Strong contractions of the womb; or, if you will, the uterine pains, just before languid, feeble, and at long intervals, or scarcely felt, show themselves in the most pronounced and decided manner. Generally the first pains which are felt from the influence of this

* Of twenty cases wherein Prescott took notes of the length of time which the black rye took to operate, these are the results. Two where the medicine acted at the end of seven minutes; one at the end of eight; seven at the end of ten; three at the end of eleven; three at fifteen; and four at the end of twenty minutes.

remedy are moderate, but soon display a very different character from those which preceded. If there had existed any pains in the small of the back, these vanish, and are replaced by true uterine pains, which very shortly become expulsive. At the same time if there are uterine pains not well pronounced, but still not expulsive, this remedy soon makes them assume their requisite quality. In all these instances, in proportion to the sensibility or individual susceptibility, these pains acquire very soon such a degree of force, that the patient, who may have hitherto made scarcely any sighs, soon indicates very audibly by her voice, her sufferings, as well as the great violence of her uterine pains. At the same time her figure becomes animated, the eyes sparkling, the pulse accelerated with an increase of force, &c.; circumstances which contradict the assertions of Dr. Davies, stating that the circulation is not at all affected, whatever may be the violence of the uterine pains. Besides these particular symptoms, which are perhaps always more or less attendant on all cases of quick delivery, Foot and some other writers have remarked in the character of certain females, upon taking the spurred rye, an increase of irritability, agitation, impatience, and violence of temper, easily augmented by the very slightest causes. These last symptoms are the result of a degree of cerebral excitement, caused by the severity of the pains, and coming on in the

course of many accouchements, even where no spurred rye had been given, and which therefore ought not to be attributed to this remedy, as it really does not appear to exert any action upon the brain itself. If during the pains the hand be laid on the lower part of the abdomen, the uterus will be found contracted firmly, and presenting a circumscribed globular figure beneath the abdominal parietes, which are vigorously assisting its efforts. Indeed such is the vigour of these uterine contractions that the fœtus cannot reascend, and remains unmoveable during the intervals of pains, so that every fresh contraction causes it to descend still lower. Nay, in some females so powerful is this action, that while attending the wife of a physician, M. Chevrue! perceived, that during the intervals between each pain, the uterus never ceased acting upon its contents until the child was completely expelled.

On examination it is found, according to the stage of the labour, that the orifice of the uterus becomes more or less dilated, and is making way for the presenting portion of the child, or the bag of waters, provided the membranes are still unbroken. In a word, every thing announces the return or existence of labour pains, and a speedy delivery; which takes place very frequently within half an hour after the employment of the remedy, particularly if it is not *a first child-birth*.

The child being born, the womb continues to

contract, closing upon itself, either by means of its natural contractibility, or from the effect of the remedy. The woman then suffers no other pains than those which have produced delivery; which being completed by the expulsion of the placenta, &c. she remains then, all other things being equal, as if no remedy had been employed. M. Chevrueil observes, that the blood furnished by the umbilical cord presents no character different at all from other cases. In regard to delivery we ought here to state, that we know of no case where the ergot has been employed a second time to procure the expulsion of the placenta, after having been already given to hasten the birth of the child. Without, therefore, prejudging this question too much, we are induced to conclude, that the uterine contractions produced by the ergot (in the case of torpidity of the womb during parturition) continue sufficiently long in all cases to bring about the expulsion of the placenta, as well as to hinder all subsequent hemorrhages. For there is no instance of any accident from this cause having happened after the employment of this remedy; more particularly as we know, that it has often been given to females who, after delivery, had suffered before more or less severely from hemorrhages: and these remarks seem to confirm the opinion of Foot, that even after delivery, the uterine contractions produced by the ergot continue for at least twelve or fifteen minutes.

With regard to all the subsequent effects of parturition, such as the flow of the lochia, the secretion of milk, and other changes, all these go on in their exact natural order as usual. Nevertheless some authors, and especially Prescott, have observed, that when the black rye had been used to assist delivery, the lochial discharge was still less abundant than in other cases. He even mentions, that in two females this discharge ceased completely on the second or third day after delivery, without any bad consequence having resulted therefrom.

In one of M. Goupil's cases it is stated also, that the lochial flux was very scanty; but it is important here to remark, that this remedy had been then given to stop a considerable flooding, and that in all the cases of flooding after child-birth, the subsequent discharges are always more or less diminished. Villenève states, that in all the cases where he had given the black rye (which, by the way, were all cases of child-bearing) the lochial flux had never presented any uncommon appearance, neither as to its quantity, nature, or duration.

M. Goupil also makes mention of two women, who upon taking this remedy were seized with violent colic. But as it was the third child with one, and the fourth with the other, and as consequently both were so circumstanced that colic is then a frequent occurrence, no inference can

thence be drawn against the use of this medicine. In the last case reported by the same author, he mentions also, that a sort of tenesmus supervened, with a violent pain in the kidneys, and strong bearing down pains ; and which state lasted some part of the day of her delivery. But is all this train of symptoms really to be attributed (as that writer supposes) to a too prolonged action of the ergot of rye ? or rather, may not the dose given have been stronger than was requisite in this particular instance.

In some cases the hope of a speedy delivery is not realised ; and at the end of a certain time, an hour or two for instance, the uterine contractions, provoked by the spurred rye, become tardy, rare, and languid, and even cease completely. It is necessary then, provided no cause exists to the contrary, to have recourse, as we have already stated, to one or several more doses of this medicine, from which we then generally obtain the desired effect.

Still there are cases where the ergot of rye, after having produced the most decided uterine contractions, finishes by being of no avail against the obstacles which the head, after having escaped through the cervix uteri, has still to surmount from the narrowness of the pelvis, or from the rigidity of the vagina, in women bearing their first children. It is then that, according to the example of Chevrueil, and at the end of a certain time, spent

in unavailing efforts, the delivery ought to be finished by means of the forceps. This practice, or rather necessity, does not by any means detract from the good effects of the remedy; which in cases like this is still a means of shortening the duration of the labour, by determining the complete dilatation of the os uteri, and thus proving favourable to the employing of instruments. As to the cases of complete want of success, we shall treat of these hereafter. It happens with some women, from one of the causes already pointed out, or from different circumstances, that a greater or less quantity of the medicine is rejected by vomiting a few moments after it has been swallowed; most frequently the second dose shares the same fate. In this case we should administer the remedy in a *lavement*. What is remarkable is, that with some women, in spite of the complete rejection of this remedy from the stomach, there has resulted, notwithstanding, a marked action towards the uterus, either from some small portion having been left in the stomach, or from the energy imparted to the whole frame from the vomitings; and from the sympathy that exists between the stomach and the uterus.

Another remarkable phenomenon which has been observed, at least in one instance after taking the ergot of rye (which, however, had been given in a dose of not less than a drachm and a half), is that of a state of intoxication, which

lasted an hour. Yet M. Goupil, who makes mention of this occurrence in his fifteenth case, thinks it could not have been caused by this medicine only. Dr. Villeneuve observes, that as in other instances of the healing art, where the well informed and judicious physician is forced to agree that nature, in some cases, would have sufficed as well without as with his assistance; so it may happen with regard to the use of the ergot of rye; for the ergot may be administered after being perfectly indicated, and yet the delivery may take place equally well without any sort of assistance: for we see daily the labour pains totally suspended, and then after an interval resuming spontaneously their course, and the labour concluded so promptly, that the practitioner is sometimes quite at fault.

This sort of declaration, Dr. Villeneuve adds, he feels himself induced to make in the name of the partizans of the spurred rye, by way of serving for an answer to certain arguments of their adversaries, who pronounce them to be as much prejudiced *in favour* of this remedy, as they themselves are *against* it: insomuch, that on one side they do not believe them capable of acknowledging, that in some cases the natural efforts might have proved sufficient without any other means; whilst the others pretend, that all the successes of the ergot are only apparent; the contractions of the uterus relaxed, enfeebled, or suspended, after

a shorter or longer interval, being always, in their opinion, upon the very eve of being reanimated, or appearing again, just when the use of the spurred rye has been resolved on. Notwithstanding it has been clearly proved, that in the majority of instances where the labour pains have returned followed by delivery, immediately after the methodical employment of the spurred rye, that these effects are as completely the effects of the remedy, as that the nausea and vomitings which supervene after the administration of an emetic are due to that medicine.

We shall conclude this chapter by remarking, that whenever the pains do not become vigorous after more than half an hour subsequent to the giving the ergot, there is every reason to believe that it has nothing to do with the return of the labour; and still more so, that whenever the delivery does not ensue till several hours after taking the remedy, that it has been accomplished entirely without its assistance.

CHAP. X.

MODE IN WHICH THE SPURRED RYE ACTS.

WE are as yet completely in the dark as to the exact manner in which this remedy acts during parturition. All that we know for certain is, that this singular effect arises from its awakening and

determining the muscular contractions of the uterus, when they become enfeebled or suspended during the course of child-birth. It is also quite evident, that the spurred rye only acts upon the womb through the influence of sympathy, the uterine pains coming on shortly after the swallowing the remedy; which, in spite of a contrary opinion expressed by Hall and Guiaud, would seem to forbid all idea of absorption through the ramifications of the circulation; and that its action is quite immediate, so to speak, upon the uterine organs. This remark is particularly founded upon what takes place when the spurred rye is administered by the mouth, for then it is quite evident that it acts by bringing into play, in a manner peculiar to itself, the sympathies which the stomach exercises upon the uterus, and from whence results the necessary expulsive contractions, by aid of which that organ gets rid of the fruit of conception. We may also conclude, that when taken by the mouth it exerts no irritative action upon the intestinal tube, and produces no sort of alvine evacuation; and, according to M. Billing, after having passed *through* the stomach, it has no longer any action on the uterus, as there is no sympathy between the womb and the *small* intestines.

As to the *modus agendi* of the ergot of rye, when it is administered in *lavemens*, we may equally conclude that its action is quite sym-

pathetic, the rectum and the uterus having sympathetic connexions of various kinds, as has been perfectly proved and demonstrated by a number of facts, anatomical, physiological, and pathological.

The mode of action of the ergot of rye, when we inject into the veins a liquid more or less impregnated with it (as M. Girard did to accelerate parturition in a cow), is explained by that elective sensibility in animal bodies, which causes a medicine (whose action is more or less special upon any particular organ), when injected into the veins, or introduced into the system by any mode more or less remote; to act, nevertheless, at the end of a given time, upon that same organ just as if it had been applied to it in the first instance. This happens, for example, whenever we inject an emetic solution into the veins, which injection very soon acts on the stomach, and produces vomiting. When the ergot of rye is directed at once upon the os uteri, or even inside of that organ by injections, its immediate action would be inexplicable in any other way than by saying, that it operated by immediately bringing into play the contractility of the organ itself.

Foot, Waller, and Mackenzie, all join in acknowledging, that this remedy can only act during parturition, by sympathy conveyed by aid of the nerves upon the muscular system, which thus proves the active agent of delivery; supposing that the diaphragm and abdominal muscles enter at

that time into a state of convulsion. One of them, Waller, supports this opinion by the analogy which he thinks exists between the effects of the ergot given methodically, and the convulsive ergotisme, which he compares to the phenomena resulting from the action of *nux vomica* upon the animal system. But, as we shall show hereafter, there does not exist any degree of convulsion in the effects produced by spurred rye given methodically: so that in our way of thinking, one part of this theory must be regarded as erroneous.

Stearns, who also admits the sympathetic action of this remedy from the stomach towards the uterus, supposes that it produces upon the latter organ a debilitating effect, just as emetics do upon the system at large; and that it acts, in short, as bloodletting does, by producing a state of relaxation; which, however, is in our minds a supposition entirely at variance with the real facts.

A very ingenious comparison started by M. Baudeloque, is perhaps much more agreeable to truth; namely, that the effect of the ergot upon the muscular fibres of the womb, is very analogous to the powers of a minute quantity of spirituous liquor introduced into the stomach during a journey, when the muscles are fatigued, which, by reanimating their fibres, enables us to continue our exertions, and fulfil the remainder of our task without causing any convulsion. From what has been said, and also from the known nature of the

spurred rye; its chemical analysis; its immediate effects upon the stomach (where it produces no more feeling of heat than upon the rest of the frame); and lastly, from the promptitude of its action; we may conclude, that this substance does not act in exciting the uterine contractions, like cordials and corroborants, which only operate by a general stimulating of the whole animal system, and which excitation the womb feels only in common with the rest of the system, but which is generally prolonged even after the expulsion of the products of conception. It may be added, that when injected into the rectum, neither does it act like other irritating substances administered in this way (as we have already stated), in order to awaken or quicken the uterine contractions, as is well proved by the experiments of Desgranges; who gave to several females *lavemens* containing the spurred rye without their knowledge, and which produced neither irritation nor evacuation. Having stated so much, there remains nothing very probable to be advanced; and we may well agree with Stearns, in asserting, that it is impossible to explain how the ergot succeeds, or, particularly, how it happens to fail: for, as Bigeschi says, in order to explain the singular action of this remedy, we should have to build up a heap of conjectures, of which there would probably be no end.

A very remarkable fact, particularly pointed out

by Waller and Bailly, is, that this substance does not appear to have any very decided action upon the uterus, except when this organ, containing the product of conception, is just about to expel it; that is to say, either when the pregnant female is just about to miscarry, or to bring forth. We have already stated, that amongst the accidents caused by the use of bread containing the ergot of rye, no mention is ever made either of abortion or premature parturition, as being its immediate effect. Chapman reports only, that when given to pregnant women, the ergotted rye occasions a certain uneasiness towards the uterus. Lastly, we are in possession of one case, from which it results, that twenty grains of ergot in powder were given at an improper time, but without causing any bad effect to a woman who had false pains, and who was not delivered until one month thereafter. Another American physician, Dr. Hall, full of prejudiced opinions against the ergot, would make us believe, that this substance acts in the manner of a poison; causing great disturbance in the system; rendering the pulse small and feeble; acting in a poisonous manner upon the blood; and imparting to this fluid qualities equally hurtful to the mother and child: finally, neither determining nor hastening delivery. And adding, that it acts like severe lesions or dangerous maladies, which happening to pregnant women, make them miscarry, or have premature births. But all this we know to be so

perfectly false and at variance with the facts, that it does not merit any refutation.

This property of the spurred rye never to excite uterine contractions except when this organ has a tendency to get rid of its contents at any time, is also remarkable as having been acknowledged and stated in a positive manner by both Balmé and Chatard, who are far from prejudiced in favour of this remedy. Thus Balmé states accurately, that the effects of the ergotted rye are not always confined to the digestive organs, but that they extend sometimes to consentient or neighbouring ones, particularly when they are in a state of action or irritation, as happens in regard to the womb of women who are about to be delivered. Then as to Chatard, he says, that the ergot has not any action upon the womb except during labour, when that organ becomes so much the centre of activity, that it attracts to itself what would otherwise be dispersed over the whole animal system. From all our knowledge in physiology and materia medica, and from what we know of the effects of the ergot medicinally administered, might we not hazard the following explanation: The womb being endowed during gestation with the most exquisite sensibility, perhaps altogether peculiar, and exercising and receiving very multiplied sympathies, it may at the moment of parturition acquire such an increase of sensibility as to be more or less alive to the impression of the qua-

lities of the ergot; wherefore, from the methodical employment of this medicine, its expulsive contractions are rendered more numerous, prolonged, and active, than from the sole efforts of nature. This explanation will also be found in accordance with the opinions of different authors, who have ventured more or less upon the important question of its *modus agendi*. Such are Bordettes, who establishes, that the spurred rye is the especial stimulant of the womb; Bogiovanni, who looks upon this medicine as having a special elective action upon this organ; Prescott, who says, that this substance exerts upon the womb an action superior to all other agents; Stearns, who considers the effects of the ergot upon the uterus as more certain than that of emetic tartar upon the stomach, or of jalap on the intestines; Erskine, who thinks, from his trials, that the principal action of ergot is exclusively felt by the uterus; Henrischen, who thinks it probable that this substance has upon the uterine system an elective action, just as cantharides upon the urinary passages; an action which Lainé is tempted to attribute to a particular principle, which may be contained in ergot, but which has not as yet been made known by chemical analysis. Lastly of all, the opinion of Goupil is, that the influence of spurred rye is specific, either upon the nerves of the plexus hypogastric, or upon the ganglions from whence they arise: an action similar to that of

different poisons. And if so, he adds, that compression of the hypogastric plexus, or its pathological state, would render the administration of this remedy of no avail. Lastly, in pursuing the comparison of the especiality of action, we might say, that the uterus, at the moment of parturition, might acknowledge in the ergot of rye its peculiar stimulant, just as the salivary glands, the stomach, the rectum, &c. are constantly stimulated by mercury, ipecacuan, aloes, &c.; which is, perhaps, little better than endeavouring to explain the *ignotum per ignotius*, &c.

CHAP. XI.

ON THE FAILURES OF SUCCESS OF THE SPURRED RYE.

WE may consider the failures of this remedy under two different points of view. First, as happening in a few distinct individual cases; and secondly, as taking place in a pretty considerable class of persons, to whom this medicine appears to have been administered in a suitable manner. In the first instance, it is evident that the want of action must arise from the particular temperaments of the individuals; whilst in the second, every thing leads us to believe, that the want of effect must have depended upon the particular quality of the ergot of rye which was employed.

Like a number of other medicinal substances which act with more or less energy upon our frames, spurred rye produces at times no sensible effect, although given under the most proper circumstances, and in doses sufficiently large. This remarkable phenomenon, which arises from the idiosyncrasy of the patient, and which Hosack attributes, in a general way, to the ill-timed employment of the remedy, ought not to surprise any of those persons in whose hands opium, cinchona, emetic tartar, mercury, &c. all suitably administered, far from proving at all times useful and efficacious remedies, are sometimes of no effect, and even prejudicial. And here we ought to remark, in favour of the ergot duly administered, that if in some cases it seems to be altogether inert, yet it never occasions any accident. For we disagree altogether with Hall, who says, that wherever it fails in producing uterine contractions, it produces more or less of general constitutional derangement.

Some are of opinion, that the general causes of failure of this remedy is its not being given in doses sufficiently large. This we deny, for we think that when given to the extent of sixty or eighty grains in the course of some hours; if it then fails, we ought not to go beyond this quantity, at least until from some new and successful experiments we may be permitted to act otherwise. Various explanations have been

offered as to the causes of failure in various cases. The staleness of the ergot, either in the state of grain or in powder, being considered as a circumstance which diminishes its deleterious qualities, it has been thought, that amongst several cases of failure, use had been made of some old ergot, or of a powder too long kept. M. Desgranges, in particular, is of opinion, that in becoming old, the ergot of rye loses its power over the uterus. It would be right, therefore, in all cases, to use only the freshest ergot we can procure. M. Baudeloque however thinks, that in very rainy seasons the viscid yellow fluid proceeding from the *sphacelaria* before noticed (page 6), and which flowed over the grains of the rye, being washed off, and the fungus itself been melted down, detached, and removed, is so completely separated from the black grains, that they no longer retain any of their peculiar properties. He also thinks, that this will more readily happen in case the rye has been carried into the barn, and threshed out before the ergotted grains have been selected, as then the friction and carriage, &c. may have detached the exterior scales, upon which it is most probable the activity of the ergot depends. And from this his notion, that the minute inushroom already described constitutes the most essential part of the ergot, Baudeloque adds, that it would be of great consequence to gather the grains whilst upon the ears, before they were reaped; and to choose,

in the preference, the ergots upon which the spha-celaires were still adherent. But as this is merely hypothetical reasoning on the part of M. Baudeloque, and not supported by the facts of the case, we are not inclined to place much reliance on it, as we know the ergot has been found quite efficacious, even when it has been carelessly treated, and suffered friction during long journeys, &c. Another manner of accounting for the inefficacy of the ergot has been imagined by M. Balmé, and in some degree established by him; and his opinion is, that the physical properties of this grain vary according to the climate. Thus, in those countries where the use of ergotted rye is followed by accidents, the interior substance is of a whitish grey, gluey, very difficult to break, and also exhaling a mouldy smell, and strongly impressing upon the tongue an acrid taste; whilst in those countries where complaints are but seldom made of its bad effects, this same substance is white, farinaceous, and devoid of acrimony. If this assertion were demonstrated, still we should have every reason to believe, that in more than one case where the ergot had been employed without effect, this grain, nevertheless, possessed all the conditions which render it active. Besides, the ergot gathered during years of continued rains, having been generally regarded as less active, it has been conjectured, that what had been employed in the case in question, proceeded from a crop of this

kind; but the humidity of the atmosphere being one of the circumstances which preside at the formation or development of the ergot, it is difficult to conceive that a little excess of humidity could destroy more or less completely the usual qualities of this sort of grain. These different suppositions and hypotheses, announce pretty evidently that the ergot of rye (of which we have said that Wildenow admitted two species) presents modifications in its very nature, or that otherwise it is not always identical; which may be owing to different influences under which it is exposed, like all other vegetables. These might put us into the way of discovering the cause of these trains of failure, of which several writers make mention; for every thing leads to the belief, that it is in the particular qualities of the grain employed, or of its powder, that the causes of these failures reside.

It may therefore be laid down, that in this case the spurred rye, which Chapman regards also as a transitory uncertain therapeutic substance, either did not possess, or had lost, the particular qualities which render it proper to act, especially upon the uterus during parturition; qualities which we know not exactly how to describe or point out; but which ulterior observations may no doubt hereafter discover; whence M. Giraud Saint Rome has said, that the ergot of rye is as yet merely on its trial.

To arrive the more speedily at some just conclusions, we would observe, that it is requisite on one part, carefully to study all the circumstances of those cases wherein the ergot is administered ; and on the other, to determine all the different conditions which this remedy presents. Thus, for instance, in regard to the women, according to M. Balmé's suggestion, it is always essential to ascertain the state of the stomach at the time of giving the remedy, as it may perchance contain matters susceptible of modifying the effect, or at least some sort of viands capable of producing analogous results. As to the ergot itself, the subject of such various opinions both as to its nature and properties, the necessity must be felt of studying it anew, not only in its entire state, but also in the different alterations of which it is susceptible ; such for instance as that of which Mitchell speaks, when altered by the presence of a certain quantity of insects, which in his opinion must give it certain novel qualities, which he compares to those of cantharides.

However that may be, the frequent want of action of the ergot, altogether accidental, having served as a basis for the too exclusive opinion of many physicians in regard to its uses in child-birth ; it has thence resulted, that some grant it only very doubtful uterine properties ; and that others would completely reject it from the list of the *materia medica*, as being a substance wholly inert.

In the number of the former are Desormeaux, who says with a prudent degree of reserve, that although the experiments have not been very favourable, we ought to be in no haste to pronounce judgment upon the spurred rye: Gardieu, and Martin Solon, who look upon it as a doubtful and uncertain remedy, but who advise nevertheless to make new experiments, particularly in cases of uterine hemorrhage, establishing that a single case of flooding stopped by this remedy, would be more demonstrative of its action upon the contractibility of the womb than all that has been reported upon its obstetrical qualities properly so called: Philibert, who pretends that the ergot has not maintained its reputation, and that new experiments are requisite: lastly, M. Vauquelin, who in his lectures concludes that this substance yet requires to be studied.

Amongst the second class are Le Mercier, who has found the ergot altogether inefficacious, either in quickening child-birth, or in favouring the expulsion of the placenta: Le Maire-Lysancourt, who, during a sitting of the Section of Pharmacy of the Royal Academy of Medicine, sustains, after Beclard, that the ergot possesses none of the advantages attributed to it; an assertion combated by Caventon and Chevallier, who quote facts favourable to the obstetrical employment of this substance: Bassett and Legouais, who without possessing any facts to be opposed to authentic

cases, affirm in the most positive manner, that if this substance obtains some appearance of success, it is because it has been administered precisely at the moment when nature was about to resume her work; a strange mistake surely, considering the numbers and talents of the persons who have thus been duped. According to this false way of reasoning, we might deny to all medicines, even the most energetic, the properties which they always manifest. Thus we might as well say, that an accession of fever had not taken place in a person labouring under that disease, not because he had made use of the cinchona, but only because the accession which we expected was not to take place; or that an individual had vomited after taking emetic tartar, only because the stomach was about to reject its contents at the moment of taking that remedy.

To those persons who, although refusing any obstetrical virtues to the ergot, yet admit that it never produces any disagreeable effects, we must add two other authorities, namely, M. Chaussier, and Madame La Chapelle, who, endowed with great talents for her task, and strengthened by a great many negative facts observed by herself, under the eyes of M. Chaussier, gives us the result of her opinion of the total inefficacy of the remedy. We would even add, that M. Chaussier, when presiding as professor at the reading of M. Bordot's thesis upon this subject, made a memo-

randum on it to this effect ; that after a great many experiments it was proved, that this substance produced no effect. And in conclusion we must add to the list of negatives, the opinions of Duges, who, in a few lines bestowed upon it, accuses it of total inefficacy.

CHAP. XII.

HARMLESS QUALITIES OF THE SPURRED RYE WHEN
GIVEN MEDICINALLY—IMAGINARY ACCIDENTS AT-
TRIBUTED TO IT.

THE physicians who have declared themselves adverse to the medicinal employment of the ergot of rye, have made use of the following points of argument :

1st, The deleterious effects produced by bread containing portions of this bad grain.

2dly, On account of some original or secondary accidents which might supervene with those females after the remedial employment of this substance, and which they attribute to it more or less gratuitously.

3dly, Pretended bad effects which result from it in the person of the infant.

4thly and lastly, From the culpable abuse which might be made of it, as a substance causing abortion.

We shall point out in this chapter, which we shall divide into four sections, the want of foundation for these capital charges, without deigning to notice those vague complaints, those unfounded fears and absurd apprehensions which have led some authors to desire, without any positive motive, that no use should be made of this substance.

SECTION I.

As it is of importance to convince those who are hostile to the ergot of rye, of the harmlessness of this substance when suitably administered, and also of giving confidence to the timid as to its employment, we should first remark, in order to destroy, as far as lies in our power, the principal charge against it, that there are a whole host of facts which prove, that many individuals have eaten for fifteen or twenty days of bread into which this diseased grain entered, in the proportion of an eighth or even a sixth part, without experiencing the smallest inconvenience therefrom; and that there are many instances of persons who, at the end of a considerable time, have suffered nothing unpleasant; a circumstance which Pentrin has generally remarked in Silesia. Besides, it is generally acknowledged that, in the proportion of one twelfth, this bad grain has not caused any

accidents ; as indeed the panary fermentation and the baking must no doubt modify its effects. In the next place, we should quote the experiments of Parmentier, who took every morning, on an empty stomach, during eight days, half a drachm of the powder of ergot without experiencing any inconvenience. "My sleep," says he, "was tranquil during all the time, nor had I the smallest headache." But fearing that the ergotted rye thus taken, without having been fermented, had not the noxious qualities of which it has been accused when it exists in the form of bread, Parmentier mixed some powder of ergot, in the proportion of a fourth, and even a third, with common flour, and had it made into bread, of which he ate, and also gave it to several animals, but without producing the smallest bad effect.

Maier, as reported by Wesener, took also, but in increasing doses, some pure ergot, to a very considerable amount, and without being at all affected by it. Goupil relates, that several times before he ventured to prescribe to others a drachm and a half of the spurred rye, he had himself taken two drachms, and even two drachms and a half ; and that sickness and vomitings, with colic pains and head-ache, were the only bad effects he experienced, and which he attributes to a very high degree of irritability in the mucous lining of his stomach and intestines. Cordier, who made the same experiment, but with the ergot in grains,

which he masticated before swallowing it, experienced pretty nearly the same phenomena, and also some acrimony in the mouth, and a degree of salivation. Another individual wishing to make the same experiment, experienced, on taking the first dose, vomitings which prevented him from pursuing his essays, but which produced no other bad consequences.

Lastly, we ought to quote the trials pointed out by Chapman, and made by Erskine ; from which it results, that the ergot administered to males never produced any change in the state of the pulse, and that vomitings and nausea never supervened until the dose (which is not stated) was carried to too great a quantity.

SECTION II.

After the facts we have just stated, how is it possible to believe that twenty or thirty grains, or even a drachm of this substance given at one time, and almost always in fractionary parts, could cause the smallest accident, or the least disagreeable result, either immediately or consequently.

And this we should say, because if even in the first moments after its being received into the stomach it should cause vomitings, no one could count these as accidents, since they come on very frequently of their own accord during parturition, and since in general they hasten it ; so that, as every practitioner knows, it is a good practice to

prescribe them, by way of exciting the contractions of the womb.

Then as to convulsions, of which some authors have spoken, and which they have accused the spurred rye of having caused, there does not exist, up to this time, any case in which they have arisen after its employment; although the opponents of this remedy accuse it of only accelerating parturition by convulsing the uterus. And on this occasion we ought to repeat the judicious remark made by Baudeloque, that to be called convulsive it is not sufficient that the uterine convulsions should be much stronger and more violent than is natural, but that they ought also to be irregular, without order, and dangerous; a state which has never been remarked by any author, and which, in one word, has never taken place. Nevertheless, as even where general convulsions do come on after the giving of the ergot, these might depend wholly on another cause; since this accident does happen but too frequently with women in child-bed, it is quite clear that we can have no right to attribute them to the use of this remedy where any other cause coexists. And in support of this opinion we must state a fact reported by M. Baudeloque, of a young woman between sixteen and seventeen years of age, who having taken fifty grains of the spurred rye to hasten her delivery, was seized with convulsions at the moment when the head of the infant began

to escape from the pelvis. By the aid of the forceps she was delivered of a child, which was still-born. This female was of a sanguine temperament, in whom the symptoms of cerebral congestion had preceded the convulsions ; so that there was nothing in this case which could be imputed to the new remedy employed ; the female in question reuniting in her person the majority of circumstances predisposing to or bringing on convulsions. As to the death of the child, neither does that present any thing remarkable under similar circumstances.

Lastly, we should mention here the fears expressed by M. Broussais as to this remedy ; as he thinks that it must produce painful consequences to the nervous system, and thereby occasion a rupture of the womb ; because the womb might contract too violently, and give way to its own contractions : and he adds, that this remedy can have no more efficacy against the torpidity of the uterus, than the *nux vomica* in paralysis.

Whatever may be the authority of this celebrated professor, we are far from participating in his fears as to the remedial employment of the ergot of rye ; being well assured that they have their origin rather in the general system of medicine, which he has undertaken to establish, than in any observation of facts to justify his apprehensions. In opposition to all these fancies, we may quote Mr. Waterhouse, who looks upon the ergot as

being of admirable efficacy in case of puerperal convulsions, an opinion which he founds upon a fact to be quoted by us hereafter.

Independently of Broussais, who fears the stimulating action of this substance upon the stomach, some authors, with Legouais, reckon up several other dangers, as those of gastritis, peritonitis, and metritis, as likely to follow the use of the ergot. The absence of every sort of fact in favour of their assertion, joined to all that has been already stated in this chapter, ought to dissipate every apprehension of this kind; as there does not exist any where, to our knowledge, any case of gastritis or enteritis having ensued either from the curative use of this substance, or from its accidental employment as food, at least during the early times. As to peritonitis or gastritis, as coming from this cause, we do not know of any clear case; because we do not, like the opponents of the ergot, consider that abdominal phlegmasia, of which traces appeared in the body of the woman whose case is stated by Desgranges as arising from the use of this remedy; which in this case was most clearly administered at a very improper time. We shall quote literally this case, almost always garbled by our adversaries, and upon which they are so fond of grounding their attacks; so that every one may judge for himself on which side the truth or the error lies.

These are M. Desgrange's own words: " In

the first place I ought to declare, that I did not myself witness this case, borrowed from the obstetrical practice of one of my junior colleagues; but having learnt from him that he had administered the ergot, I requested to be informed of the result. I learned, in his presence, that it was the case of a poor girl, found lying on the pavement of the streets of Lyons, begging, starving, and labouring under sickness. She was suffering, had undergone all sorts of privations, and was extremely weak. Her pains, which were thought to belong to the act of parturition, were as slow, feeble, and lingering as they could well be, but more on account of her general state of debility than from any real torpidity of the womb." The remedy was administered and delivery took place.

"The first effect of parturition by the removal of the burden, and a *slight* loss of blood thence resulting, appeared to relieve this unfortunate young woman, who, in spite of every care bestowed on her, died on the eighth day. The opening of her body discovered the traces of a slight peritonitis, and of a slow chronic phlegmasia. The accoucheur acknowledged that the womb was without any apparent change, at least in the eyes of those accustomed to examine the bowels of women dying at various periods after their delivery. Neither of us doubted that this young female had contained in her own system the elements of this stage of

inflammation before having been received into the Hospital de la Charité, and being there put to bed; and that it was at the time of the milk-fever that this had put on the character of acute disease; perhaps even at this very time too there was epidemic in the hospital a sort of puerperal peritonitis. At all events, it may with truth be said, that the remedy did not seem to have been indicated; but there existed then a wish to try it, and the occasion was thought to have been favourable. Certain however it is, that this was not exactly a case for hastening delivery, or even to provoke it by a specific uterine stimulant."

Such then is the case quoted so often by all the decriers of the ergot of rye, and which, in our opinion, proves so little against that remedy, that it would be a work of supererogation to enter into its justification. The same may be said of the fact reported by De la Prade, &c. &c.

SECTION III.

If several hundreds of deliveries, which by the aid of the spurred rye have terminated as happily for the infant as for the mother, were not sufficient to prove that this substance is equally safe to both, one might in some degree partake of the fears expressed by certain physicians upon the effects which might result from it. But the ergot having no other effect than that of awakening or inducing the uterine contractions, and that only in

such a degree as we can control by art, there can result from its medicinal employment no action noxious towards the child, nor any mechanical hurt springing from excess of activity in the contractions of the uterus. But this substance has also been accused of injuring the child mechanically, and even of causing its death, in consequence of the violence of the uterine contractions thus artificially excited; which, it has been said, may even produce asphyxia, by obliterating the circulation between the placenta and the infant.

This objection has been raised not only by Dyckman and Moore, but by an anonymous American author, mentioned by Prescott: and as this accusation would be a grave one if well founded, we will quote the single fact on which it has been reared. "A female was pregnant with twins. The first was brought away alive by means of the forceps; the second was expelled dead after the use of the ergot, found necessary from the cessation of the expulsive pains." Thence the immediate conclusion formed by the anonymous writer, that the ergot of rye caused the deaths of the children, by inducing too strong and rapid contractions of the uterus. One may so easily conceive all the objections which might be produced against so absolute an opinion, that I will not insult the reader's good sense by detaining him on this point.

SECTION IV.

One of the most severe charges brought against the ergot of rye, is that of its being able to produce abortion, and therefore being one of those dangerous articles the sale of which ought to be legally prohibited, in order to prevent its culpable employment. Thus Gerardin says, that it is an opinion generally received in the colonies, that the spurred rye is a certain means of producing abortion; an accident which Goupil, in the corollaries which conclude his excellent treatise, regards rather as being possible than proved. No doubt it is from a similar belief that Henry Pelletier and Planche, in a report made to the French Minister of the Interior, in the name of the Royal Academy of Medicine, have recommended the exclusion from France of a certain quantity of ergot of rye; and that Rose and Guibert have viewed with fear, the increasing administration of this remedy. To these we may add Lorinser, quoted by Hufeland, who accuses the spurred rye of causing abortion by means of flooding; whilst, in fact, we know that this is an accident which this remedy has the power of stopping. We would therefore repeat, that even when the ergot has been taken in quantities as an aliment, it has never caused immediate abortion. In the next place, every thing seems to prove, that the ergot of rye has no action upon the

uterus, except when this organ, charged with the product of conception, tends to get rid of it, either prematurely or at the ordinary period of parturition. We know but a single fact to weaken this assertion, if indeed that be authentic. It is that quoted by Waller, who says, that he knew of a case of abortion brought on two hours after taking the ergot wilfully, by a female two months pregnant. But a single fact of this kind, unaccompanied by any particulars, and not witnessed by its relater, who does not even point out its source, and which besides is in contradiction to all that we know on the effects of the ergot, ought not to be allowed any weight. Lastly, we shall report what has been witnessed by Stearns, who mentions, that two persons had given, with culpable intentions, in cases of illegitimate pregnancy, the decoction of several ounces of spurred rye, and that during a certain time, without any bad result. He also adds, that we ought rather to attribute the accidents which may arise during the medicinal use of this remedy, to individual or casual circumstances, than to the substance itself. Let us state, that Hall considers the ergot as incapable of producing abortion, being, as he says, most frequently vomited without having produced the slightest effect, either on the womb or its contents. He even adds, that having employed it in a case of threatened miscarriage, attended with flooding, the

precursory symptoms of abortion had ceased, and the woman completed afterwards her full period of pregnancy.

CHAP. XIV.

ON THE USE OF SPURRED RYE IN VARIOUS MALADIES CONNECTED WITH THE UTERUS.

IN this chapter we shall treat of the employment of the ergot in the following predicaments :

1st, As favouring the expulsion of the placenta. 2dly, As accelerating, in cases of abortion, the expulsion of the whole or the remnant of the ovum. 3dly, As restraining uterine hemorrhages. 4thly, As producing the expulsion of clots from the womb. And 5thly, As being the means of moderating the lochial discharge. And we must here commence by stating, that from analogical reasoning this substance has been prescribed and employed by Dr. Beckman as an *emmenagogue* ; although, on the contrary, Lentin, Taube, and other writers have recorded, that amenorrhœa is generally an attendant upon cases of ergotism. Chapman says, that the ergot has been used as a remedy for hemorrhage ; and Hall mentions, that on being administered in several cases of amenorrhœa, he observed that the ergot produced a

considerable degree of derangement in the system, accompanied by pains in the epigastrium, and vomitings; which no doubt arose from the particular susceptibility of those to whom it was given. Prescott positively affirms, that the ergot of rye has no emmenagogue virtues.

But Dr. Davies, after stating that amenorrhœa is most commonly the effect of general indisposition, rather than any defect of vital powers in the uterus, yet advises the use of the ergot in such cases, and that it should be persevered in for some time. Nevertheless, although this substance may not be capable of producing a flow of the monthly evacuations from the unimpregnated uterus, it must be acknowledged, that in all cases where an ovum is present, there exists at least a great chance that its use may cause abortion.

ON THE EXPULSION OF THE PLACENTA.

The expulsion of the pulpy mass of placenta, as well as that of the fœtus, although much more rarely, may be retarded for an indefinite time by the torpidity of the womb. Although in this case art possesses several resources well known to all professional men, yet as all these, with the exception of the manual extraction, will occasionally fail, and as even this last expedient may be rendered very difficult (should any casualty have separated the umbilical cord from the placenta), the ergot may then prove a very valuable remedy.

But here, as there is not so much need of strong muscular contractions, it will not be necessary to give the ergot in full doses, and instead of giving it to be swallowed, it may be advantageously employed in *lavemens*. Bordot relates the following case (No. 10) in his last pamphlet: "Madame Rem - - -, aged twenty-three years, of a very small and delicate form, had been delivered the preceding year of a still-born child; I was called to her in the seventh month of her second pregnancy, on the 31st March, 1825, at six o'clock a. m. She had suffered several pains in the course of the night, and the parturition soon followed. In fact, I arrived just in time to put a ligature on the umbilical cord. The placenta not being loosened, I waited in vain for an hour, in hopes that the coming on of further contractions might favour its expulsion, and tried by gentle pulling to detach it, but without effect. Before introducing my hand to lay hold of it, which is never without its inconvenience, I caused her to swallow twenty grains of what I call the *ocyotic* powder (*pulvis partum accelerans*, the powdered ergot of rye), mixed up in a little orange-flower water; about five minutes after taking it, a single pain sufficed to expel this fleshy substance."

Dr. Balardini reports another instance, which proves still better the important services which the ergot of rye may render in certain difficult cases of occasional occurrence. With a woman

whose age is not stated, three days had elapsed without the after-birth being expelled; the uterus was soft, and without either pains or contractions, and a small degree of hemorrhage continued. Every attempt at extraction was resisted, through misplaced fear or modesty. Thirty grains of the spurred rye aroused the pains afresh, and caused the expulsion of the placenta without any accident.

After all that has been already said, the reader will not be surprised to hear, that this remedy has been also accused of having caused the retention of the placenta, when it has been given in the course of the labour, that is to say, for favouring the expulsion of the foetus! But has such an assertion any need of being refuted?

ABORTION.

According to the reports of several authors, and more particularly of Prescott, the spurred rye has also been employed successfully in accelerating delivery, or, in other words, the coming away of the whole product of conception in cases of miscarriage. This author particularly points out the virtues of this substance in abortions coming on in the early months of pregnancy, attended with hemorrhages; the cessation of which has been quickly followed by the expulsion of the embryo and its appendages.

This remark of the American physician, and our own observations, induce us to conclude, that the

ergot of rye ought never to be given in threatened abortions without any discharges; and which also the less require the employment of this substance, because the pains are always more or less lively in such cases; and these, as well as in regular labours under the same circumstances, are better aided by the use of baths, and emollient fomentations, &c.

And here we ought to lay down a maxim of the greatest importance; and which is, that we ought never to prescribe the spurred rye excepting when we are morally certain that abortion is inevitable. The dose too of the remedy in such cases, ought always to be much smaller than in accelerating the delivery of a full-sized child. We have not found in authors any detailed relation, or particular instance, of the employment of this remedy in aiding abortion. Balardini and Dr. Davies only say, that they had both employed it with success, in a case of abortion, where the placenta had remained after the coming away of the foetus.

UTERINE HEMORRHAGE.

The American physicians were the first to proclaim the virtues of the ergot in cases of this kind. Chapman looks upon it also as one of the best remedies to check flooding, not only after the delivery of the foetus, but after the coming away of the placenta, when it has been given during parturition; and considers it in such cases as a

preservative against the occurrence of flooding. Hosack even, who is far from being partial to this remedy, considers it as especially useful in floodings arising from the placenta being attached over the cervix uteri, for he observes, there is less danger then in employing the ergot, the mouth of the uterus being dilated, than in introducing the hand and turning the child. Here the spurred rye would possess a threefold advantage; first, by stopping the hemorrhage by the first contractions of the uterus, which it would produce; next, by hastening the delivery; and thirdly, by preventing any farther flooding. The same author extols this remedy in long continued losses of blood from the uterus, arising from general debility. He enumerates an instance of a woman, aged fifty, who had a chronic flooding, which no other remedy had been able to stop, and who was cured by three doses, of ten grains each, taken in the course of a day. But Goupil relates, that in a case of the same kind, M. Andrieux had met with no success from using the ergot.

Three other American physicians, Stearns, Dewees, and Church, also advise, that the ergot should be given as a prophylactic, whenever we have reason to fear the occurrence of flooding, particularly when the patient may have suffered from it during a previous delivery. Dewees relates one case where, according to every probability, he had obtained a successful result by this

means. It was that of a female who had had, after six previous children, frightful floodings; and the ergot being given at the time of her seventh child, she had not suffered from any flooding. In Italy Bigeschi has obtained the same result. In France, Bordot, Goupil, and Prefet, have also been successful in checking uterine hemorrhages after delivery, by the same means; and several other physicians have praised its use in similar cases. The employment of this remedy ought not to prevent the use of other preventive measures at the same time, and the dose of the medicine ought not to be too small; and we may also give it freely here in lavemens.

The following cases will serve to illustrate our meaning. This case comes from M. Bordot:

“Madam Chev - - -, aged thirty, of an irritable habit, although strong, had been already in child-bed twice, but had then suffered much. Being called to her on the 17th November, 1825, I found her in great agony; the waters of the amnion had come away several hours before, and the os uteri was nearly closed. As I had attended her before, I prognosticated that the labour would be lingering. Some half-baths and lavemens were administered. The night passed away without any sensible change. She had long intervals between her pains. The next day things were nearly the same; but towards evening the pains were longer and more strong, and the orifice of the womb was

nearly as large as a shilling. The fœtus presented itself by the left shoulder; and shortly thereafter having passed the cervix uteri, the right hand presented itself at the same time. I then no longer hesitated upon seizing the feet, which I brought down singly. This operation was very laborious. The infant was still-born, but after a long application of due means, it was brought back to life. As there was a loss of blood from the uterus, I hastened to search for the placenta, in order to terminate the delivery. The flooding continuing in great abundance, I recommended to the patient to lie perfectly still, and immediately gave her fifteen grains of the *ocytotic* powder, by way of bringing on some uterine contractions. The flooding was soon stopped; and I felt very distinctly the uterus becoming firm. Every thing reassumed its natural train, and the conclusion of this delivery was perfectly successful, by following all the usual precautions in similar cases."

Second case, related by Goupil :

"Madame F—, already the mother of three children, was delivered after half an hour's expulsive pains, and the placenta was extracted very soon afterwards, by a midwife called to her in my absence, and who assured me she had only made use of very gentle pulling. I arrived one hour after delivery, which had been succeeded by a very abundant flooding, and in spite of the application of iced vinegar and water; and notwith-

standing the hand had been twice introduced into the womb to bring away the clots, the blood continued to flow, and the womb only contracted for an instant, and thereafter became perfectly torpid. This state lasted till the administration of the ergot of rye. Ten minutes after the first dose of twelve grains there was a contraction of the womb, which was prolonged with rather strong pains, and a remarkable return of strength till my departure, about an hour afterwards. On going away I prescribed a second dose of twelve grains, which was given in about half an hour. The flooding did not return, and the lochial flux, without being entirely suppressed, was very trifling. She complained much of colic pains for more than twenty-four hours. The milk fever was very moderate, and, in conclusion, nothing remarkable happened. From all these facts we may conclude, that this remedy, so far from reviving a uterine hemorrhage, as Broussais thinks, has the power of remedying this dangerous accident.

CLOTS IN THE WOMB.

There is sometimes collected within the womb, after delivery, and from a concurrence of certain circumstances, a greater or less quantity of blood, which not being expelled by the efforts of nature, or extracted by art, becomes coagulated within that organ, and by being retained there frequently for several days, brings some unpleasant acci-

dents, as may easily be imagined. The expulsion of this clotted blood, acting as a foreign substance, requiring always immediate aid, the ergotted rye is perfectly indicated under such circumstances.

The following case, which happened to Mackenzie, and is quoted by Waller, proves the success of this remedy :

“ By means of fifty grains of ergot of rye infused for ten minutes in a tea-cupful of boiling water, Mackenzie procured, at the expiration of half an hour, the expulsion of several coagula, which after a delivery of twins had filled the womb; and kept it so much expanded, that the midwife had thought that there had existed a third child.

IMMODERATE LOCHIA.

In Germany, for a series of years, the property of diminishing the excessive flow of lochia has been attributed to the ergot of rye. Gaspar Bauhin has lauded it for this virtue. James, in his great Dictionary of Medicine, whilst acknowledging this property, attributes it, by mistake, to the internal substance of the grains. Hosack and Stearns too, allow that the ergot is useful in these cases; and more lately Dr. Davies, who appears to think that this remedy only moderates the excess of these discharges, when they are the result of want of uterine contraction; and who likewise

adds, but without quoting his authorities, that this remedy never having been given alone, it is still doubtful what influence it could have had in obtaining the effect required.

This is all we yet know on this subject; so that, as in the foregoing cases, authors have left us much to be learned; namely, whether they have observed the tendency to suppress the first or latter terms of these discharges; and next, at what particular period it would be desirable to prescribe this remedy, &c. And here, in concluding what we have to say in this chapter, we may report, that an anonymous writer has stated, that ergot of rye is of use in moderating the secretion of milk, but of this he gives no proofs.

CHAP. XIV.

EFFECTS OF THE ERGOT OF RYE UPON ANIMALS.

THE action of this substance upon animals, which are all averse to taking it, may, as in the human race, be considered in two respects, either as it is hurtful or salutary. Different quadrupeds and birds fed entirely or principally upon this vegetable product, have been attacked with accidents resembling those it produces upon mankind; and in like manner too they experience no bad effects when it is given to them in small doses. Chapman

states, but without quoting any instance or experiment, that when it is given to animals in a state of gestation, that it never fails to produce abortion; while Chatard reports different experiments to prove the contrary. Thus he says, one ounce of the powdered ergot being given to a sow about to farrow, only augmented the secretion of urine, and produced agitation. Three ounces given in two days, to a smaller sow, while in the middle of gestation, producing nothing remarkable. Four ounces of spurred rye given to a cow four months with calf, produced only a temporary loss of appetite. Three ounces given in two days to a she-goat, rather big with kid, produced little suffering. Wasener also states, that he gave progressively up to one drachm of the powder to a spaniel bitch with puppies, which nevertheless went its full term, and that the litter was safely brought into the world notwithstanding; and this experiment was repeated by Dr. Villeneuve with precisely the same result. We may therefore conclude, in spite of Chapman's assertions, that the ergot of rye, if given in certain doses, produces no abortive effects upon animals. Mr. Combes, having made similar experiments, found no action produced upon two bitches; but with the third there came on a violent agitation, and a loss of blood greater than usual, with the expulsion of a litter of four puppies. But as the author neglects to state at what period of the gestation he

administered the substance, we can draw no conclusion from his experiments.

As to its obstetrical employment in regard to animals, it has scarcely been used, as far as we know, except for the cow. The dose has been four ounces of the ergot in decoction, to which some have added four ounces of olive oil. It has been reported, that Dupuy obtained the same effect after injecting this decoction into the veins of a cow (of course without the oil). Percy and Laurent mention, that this same decoction, mixed with half as much brandy, injected also into the veins of a cow, caused the animal to calve speedily. The calves thus born exhibited nothing remarkable, nor did the milk of the cows present any change. It has been stated also, that the ergot has been given to ewes with a view of facilitating their parturition.

CHAP. XV.

OF THE EMPLOYMENT OF THE SPURRED RYE IN PARTURITION—RECAPITULATION OF THE VARIOUS CIRCUMSTANCES WHEREIN THIS SUBSTANCE HAS BEEN EMPLOYED.

WE shall now give a series of detailed observations stating the efficacy, and at the same time the perfect safety, of the ergot of rye in different

cases of parturition, culled from a variety of authors. Secondly, a recapitulation or indication of different circumstances in which this medicine has been administered with more or less success.

First case, by Balardini :

“ A woman aged thirty-seven, in the seventh month of her pregnancy, who had formerly borne nine full-grown children. Pains of child-birth came on with slight hemorrhage ; after seven days of diminution or cessation of pains, takes twenty grains of powdered ergot mixed with wine ; the pains come on for some hours, and then almost cease ; fifteen grains in addition are given, and bring on the delivery of a female child, which lives.”

Second case, by Bigeschi :

“ Woman healthy ; first child. Infant presents the face ; uterus in a state of irritation ; external genital parts swollen ; pains, strong and prolonged, become feeble, and at long intervals ; thirty grains of ergot bring on new pains ; delivery takes place at the end of half an hour.”

Third case, by M. Bordot :

A woman of thirty-six years, ricketty subject : had been delivered of first child by means of forceps ; extreme weakness, no pains ; thirty grains of ergot bring on delivery. The particulars are—A woman aged thirty-six, of a ricketty habit, had been already delivered four years ago with the aid of the forceps. Being called upon on the 2d

November, 1824, at seven o'clock in the morning, to attend her, I found her so weak as scarcely to be able to walk, and the slightest uterine pains made her fall into fainting fits. She had great dread of her delivery, fearing that it might be found necessary to apply instruments. The orifice of the womb was sufficiently dilated, and every thing announced an approaching delivery. I endeavoured to support the patient's spirits, but to no purpose. I waited patiently for several hours, and every appearance seemed to prove that it would be requisite to employ the forceps, after having broken the bag of waters; but after having assured myself that there existed no malformation of the pelvis, I wished to try the effect of thirty grains of ergot, which she swallowed in a mixture of orange-flower and mint water. The pains were not slow in coming on; the pulse became full and frequent; her strength was increased; and the infant, which was not full grown, was soon between my hands. The uterine contractions then ceased all at once, and I was obliged to employ gentle pulling at the umbilical cord to extract the placenta, which was already detached."

Fourth case, by Chatard:

"A woman had been suffering for nine hours the pains of child-birth, which had produced but little change in the state of the uterus. She had taken an infusion of thirty grains of the ergot of rye. Ten minutes after there came on expulsive

pains, which in less than half an hour produced a happy delivery."—N.B. Chatard thinks that nature rather than the medicine acted in this case.

Fifth case, by Chevrue! :

" A woman aged thirty, ricketty from her infancy, in height three feet eight inches, entered the hospital on the 22d February, 1823. She had suffered in the morning, and had had since mid-day very violent pains; at ten o'clock at night the head was still at the upper brim of the pelvis, and the orifice of the uterus dilated as large as a dollar. From this woman's make I feared much that she would not be delivered *naturally*, if the infant should prove rather large; but I was encouraged in measuring the basin with a pelvimeter, and finding three inches six lines of diameter at the upper orifice. I then administered an infusion of thirty grains of ergot. In ten minutes after the pains became expulsive; about an hour thereafter the pains vanished. At midnight the midwife of the hospital, having examined her, was greatly surprised to find the head pressing upon the perinæum; and the more so because the patient, using all her efforts in expelling it, made no noise, which made her believe she was not suffering. In a quarter of an hour she was delivered of an infant of the usual size, and healthy. She left the hospital six days afterwards quite well."

Sixth case, by Dr. Clark:

" A woman aged twenty-eight, pregnant of her

second child. Strong pains for more than twenty-four hours, without advancing the labour. Twenty-four grains of the ergot bring on the expulsive pains, and delivery takes place at the end of half an hour."

Seventh case, by M. De Montmahon:

"A woman aged forty-two, in her fifth pregnancy. Torpidity of the womb for twelve hours; three-quarters of an hour after taking the ergot the delivery is accomplished."

Eighth case, by Desgranges:

"Woman in her sixth pregnancy—a twin case. After a short labour the first child born perfectly healthy; an interval of fourteen hours occurs without any pains; the midwife administers infusion of ergot; at the end of half an hour the second child is expelled living, and stronger than the first."

*Eighth case, by the same:

"Woman aged twenty-three, in her third pregnancy; labour suspended during fifteen hours; decoction of a drachm of ergot given in an enema; delivery at the end of twenty-five minutes."

Ninth case, by Madam Lachapelle:

"Woman with a first child; cessation of pains at the end of fifteen hours; thirty grains of ergot given; delivery takes place in half an hour; but the author doubts nevertheless of the efficacy of the remedy."

Tenth case, by Merriman:

"A woman, aged thirty-seven, in her eighth

pregnancy—twin case. The first is born dead; pains cease after fifteen hours; infusion of one drachm of ergot given; one hour thereafter a child born in good health.”

Eleventh case, by Serrurier :

“ A woman thirty-six years of age, very irritable; a first pregnancy. At the ninth month symptoms of a dead child; at five o'clock p. m. first pains very slight, and quite ineffectual; at seven o'clock very strong pains, which soon cease; at eleven o'clock twenty grains of ergot given; and very soon afterwards she is delivered of a dead child, quite putrid.”

Twelfth case, by the same :

“ A strong woman, aged thirty-two; her fifth child. After a labour of twenty-nine hours pains almost cease; ten grains of the ergot awaken them. Delivery at the end of three-quarters of an hour.”

Thirteenth case, by Goupil :

“ A woman of thirty-three years, whose father had fallen a victim to a disease of the heart, had complained for a long time before being pregnant of dyspnœa, and pains in the region of the heart, and of palpitations. At the sixth month of her pregnancy this state was aggravated by unlucky circumstances, and became truly insupportable. The employment of leeches and venesections, and of all the other means usual in such cases, producing only very momentary relief, and even at times scarcely any. The constant abuse, although

not acknowledged, of strong liquors, and violent family disputes, much overbalanced all the advantages of any medical aid. During the last month of her pregnancy, not being able to lie down, she was forced to sleep propped up in an easy chair.

“From the first days of January, 1824, the uterine pains were perceived, but still without any dilatation of the orifice; and only on the 23d, in the evening, labour commenced by very violent pains in the loins. Violet flushings of face and dark purple lips, projection of the eyes, as if starting from their orbits, and threatening suffocation, rendered it necessary to bleed her twice. All these symptoms continued on the morning of the 24th, and there seemed an urgent necessity for terminating her labour immediately. Still the os uteri dilated but very tardily. Half a drachm of the ergot was given in two doses, at the interval of fifteen minutes. The pains in the reins soon became more intense; then became continual; and in three-quarters of an hour after taking the second dose her delivery was accomplished with ease. The infant lived and did well; but the mother only survived a few months.”

From the different cases we have stated, and likewise from all those which have come to our knowledge, and which are enumerated in the sub-

joined table, it is certain that the ergot of rye has been administered without inconvenience, and we may say with equal success, to women under very different circumstances. Thus—

1. Some were in their early youth, whilst others again, far the greater number, were already of a certain age.

2. Some few were of a sanguine temperament, but the greater part were leuco-phlegmatic persons.

3. Some were very irritable, but many more were not at all so.

4. With some, when in their unimpregnated state, their menstruation was regular and abundant, but with others there was a contrary state; and in all, this remedy had no effect afterwards on their menstruation.

5. Some had a good constitution, while others were more or less feeble, either from birth or accident; and some even were rickety.

6. Several were sufferers from severe moral afflictions; some even were prepossessed with an idea that they should die in childbed.

7. A few were cases of first labour, whilst others had borne eleven and even fourteen children.

8. Some had before undergone laborious and difficult accouchement, even requiring the aid of instruments.

9. Some who had suffered from hemorrhages and convulsions in previous deliveries escaped them entirely.

10. With a few there existed great sensibility, irritation, and even pains in the umbilical region and os uteri, appearing to denote the approach of metritis, or peritonitis; maladies, however, which have not ensued. One too had a considerable degree of anasarca.

11. In several, labour more or less advanced had lasted for three or four days, and had been suspended from twelve to fifteen hours; the waters in nearly all had flowed away for a longer or shorter time.

12. Some were twin cases, others had bulky and strong children; whilst in others the foetus had been dead for a longer or a shorter time; others had unnatural presentations.

13. Lastly, in regard to the doses and effects of this medicine, some women only took ten grains, whilst others took a drachm, or even more, which in most cases brought on delivery within an hour; whilst with others again the remedy did not act so speedily, or indeed altogether failed.

A TABLE OF THE CASES OF THE ADMINISTRATION OF
ERGOT OF RYE,

PUBLISHED UP TO JUNE 30, 1827.

	Names of the Authors.	Numbers of Cases.	Perfect Success.			Incomplete Success.	Failures.	Bad Results.
			Births.	After - Births.	Floodings.			
1.	Anonymous, by Balme	2						2
2.	Desgranges	7	5				1	1
3.	Prescott	1						1
4.	Balardini	3	1	2				
5.	Bigesclii	19	14			4	1	
6.	Bordot	18	13	2	2	1		
7.	Bourdettès	1	1					
8.	Brinkle	1	1					
9.	Briot	3	3					
10.	Chapman, Dewees	200	200					
11.	Chatard, James	12	2				7	3
12.	Chevruel	33	28			5		
13.	Clark	3	2				1	
14.	Cliet	1						1
15.	Combes	3					3	
16.	Davies	11	8	1		1	1	
17.	Desgranges	18	15			1	2	
18.	Duviard	1	1					
19.	Foot	4	4					
20.	Gardieu	1				1		
21.	Gilibert	1						1
22.	Goupil	26	18		1	2	5	
23.	Henrischen	2						2
24.	Hosack	3	3					
25.	Huchedé	2	2					
26.	Lachapelle	54	2				52	
27.	Lobstein	12	12					
28.	Mandeville	1			1			
29.	Mercier	1					1	
30.	Merriman	2	2					1
31.	Mcy	1						
32.	Montmahon	1	1					
33.	Olivier	1	1					
34.	P - - -	2	1		1			
35.	Pistre	1	1					
36.	Prescot	57	50				7	
37.	Serrurier	1	1					
38.	Stearns	200	200					
39.	Villeneuve	9	7			1	1	
40.	Waterhouse	1	1					
		720	600	5	5	16	62	12

NOTES ON THE PRECEDING TABLE OF CASES.

- No. 1. Desgranges thinks, that in neither of these cases was the ergot indicated, and that the results were not owing to the remedy.
2. In two of these cases the ergot was given in *lavemens*. One was the case of the beggar girl before related, at page 73.
3. See page 76 ; the case of twins.
4. One a case of miscarriage at five months, where *foetus* was born five hours before. The other a placenta retained three days in the womb; and from false delicacy woman refused all aid.
5. These prove that ergot is as successful in a warm as in cold climates.
6. We regret that Bordot has only given his successful cases.
7. In this case the uterine torpor was such that the use of the forceps was meditated.
8. A case of convulsions, which came on during labour, where the ergot seems to have been successfully used. See page 35.
10. These Americans seem only to have mentioned their successful cases.
11. The three fatal cases not owing to the ergot.
12. In these thirty cases two children were born dead ; one had been dead for some days, and the other strangled by the umbilical cord.
13. In the unsuccessful case the forceps was applied, and the child dead born.
21. In this case, a month after the medicine, a fever came on, which proved mortal.
23. In the two bad cases the medicine had been given out of time, as admitted by Henrischen himself.
36. Of these fifty-seven cases twenty-two were women with their first children ; and of these four were still-born. The other thirty-five only lost one child.
39. In the case of failure, the woman vomited two doses of thirty grains each, and she was delivered by forceps.
40. A case of puerperal convulsions, already mentioned at page 33.

It results then, from this table, wherein we have avoided every kind of repetition, that out of seven hundred and twenty cases wherein the spurred rye has been administered, within our knowledge, during parturition, there have been—

In the first place, Six hundred cases of complete success; that is, where the fœtus has been entirely expelled, living or dead, at the full term or otherwise; either twin cases or single; circumstances which we have not been able to specify in our table.

Secondly, Five successful cases of the delivery of the placenta or secundines.

Thirdly, Five successful in cases attended with uterine flooding after delivery.

Fourthly, Sixteen of moderately successful, which are made up of certain cases where the ergot has only excited for a certain time the expulsive pains; the deliverance being only accomplished naturally several hours after its employment: and secondly, of cases where, after having advanced the labour to that point where the application of instruments became admissible, it was at length accomplished by those means.

Fifthly, Eighty-two instances of complete failure, or cases wherein the ergot produced no evident effect; that is to say, induced no return of the uterine contractions, whatever might have been the doses in which it was given.

Sixthly, Twelve unfavourable or fatal results,

either in respect to the mother or the child; attributed by the several authors to its immediate action, or to some secondary effect of the ergot; and of the futility of which we have already given our opinion.

So that upon the whole it results, that out of seven hundred and twenty instances wherein the spurred rye has been employed, there have been six hundred and ten completely successful, not comprising those of moderate success, which we omitted; so that the chances of success are to the chances of failure in the proportion at least of seven and a half to one. Now then, as a similar result is but rarely furnished by any other of the therapeutic agents employed in cases of parturition, we may therefore conclude, that no other remedy can be compared with it, either as to its utility or efficacy in bringing on safe delivery.

Lastly, as to the proportions between the number of times that the spurred rye has been employed, and the fatal cases which are *attributed* to its use (results which would give only one unlucky case in sixty), this calculation is reduced absolutely to almost zero, considering all that has been already advanced in its favour.

CHAP. XVI.

RECAPITULATION.

FROM the preceding chapters then it appears, that the spurred rye or ergot, which chiefly shows itself in wet seasons, and is generally considered to be a diseased change in the common grain, is possessed of certain physical and chemical properties, differing entirely from those of the healthy rye.

2d, That this altered grain is the cause of various accidents, more or less severe, when it enters into the composition of bread, and is thereby taken in a certain quantity, and during a determined length of time.

3d, That this spurred rye has been employed for a length of time in cases of lingering parturition, unknown to medical men; and is endowed with this peculiar property, that when introduced into the stomach, or even the rectum, in doses of from twenty to sixty grains, it produces in a few minutes, by a stimulating or sympathetic action, strong and continued contractions of the uterus, followed by speedy and safe delivery, without producing any bad effects either upon the mother or child, provided always that this medicine be administered under suitable circumstances, and

only when the labour has been delayed or suspended in consequence of feebleness of the womb.

4th, and lastly, That in a few instances this medicine in some females produces no effect whatever.

We ought also to add, as a fact which is to be met with in the history of all new discoveries, that this remedy has been, and still is, from a variety of motives, the subject of numerous attacks which we have not attempted to conceal, but have, on the contrary, constantly pointed out; whence succeeding writers, guided by a new accession of facts, may either refute us or strengthen our conclusions, so that finally the effects of this remedy during parturition may cease to be any longer an object of controversy with the medical profession.

THE END.

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